

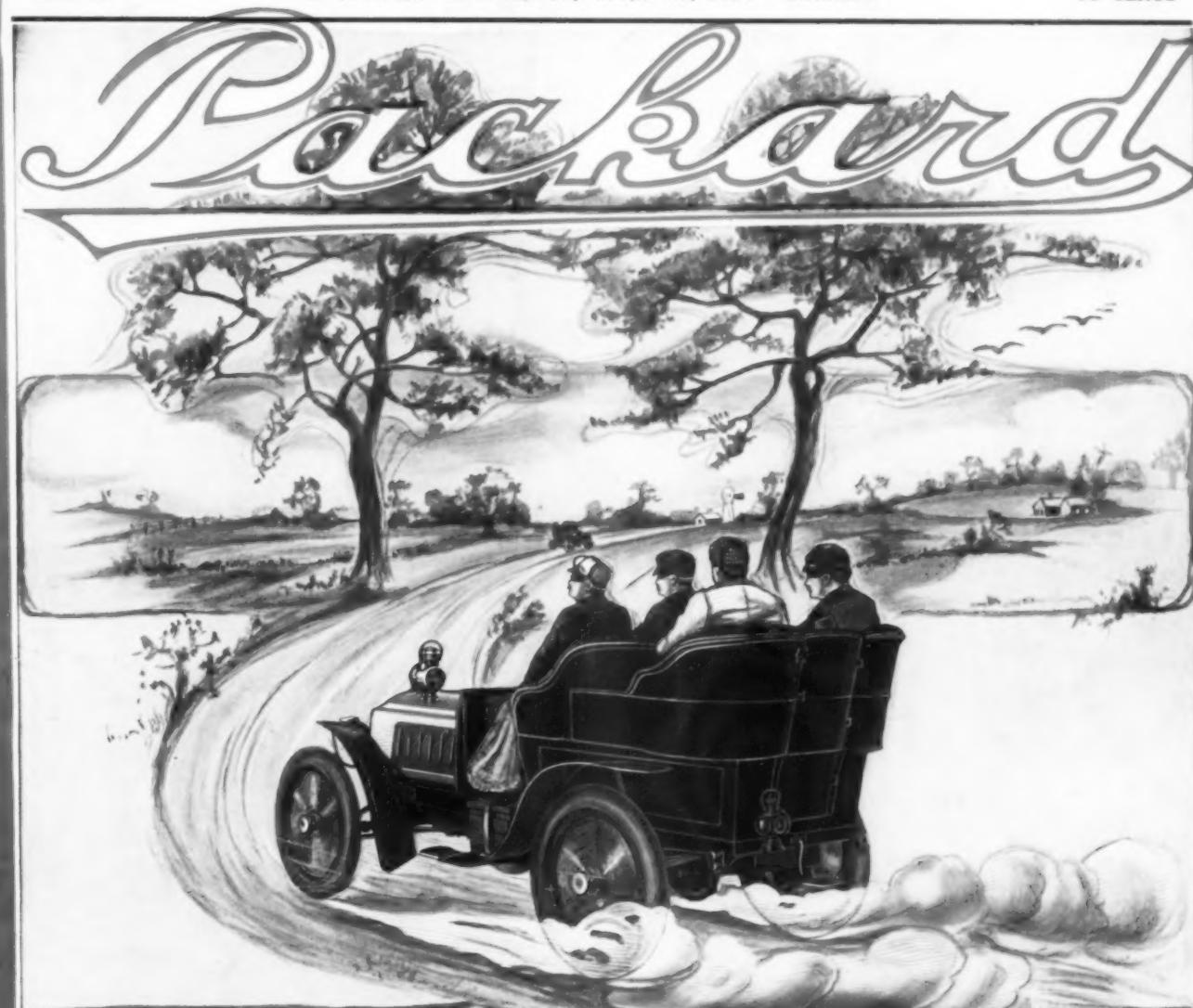
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THE AUTOMOBILE

WEEKLY

NEW YORK—SATURDAY, APRIL 30, 1904—CHICAGO

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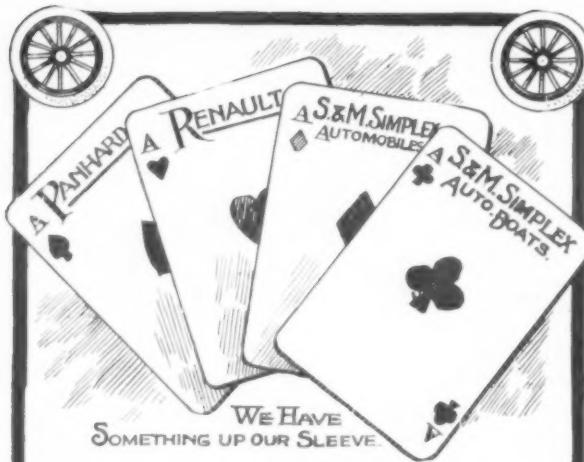
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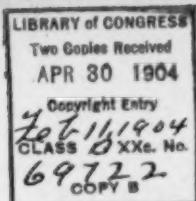
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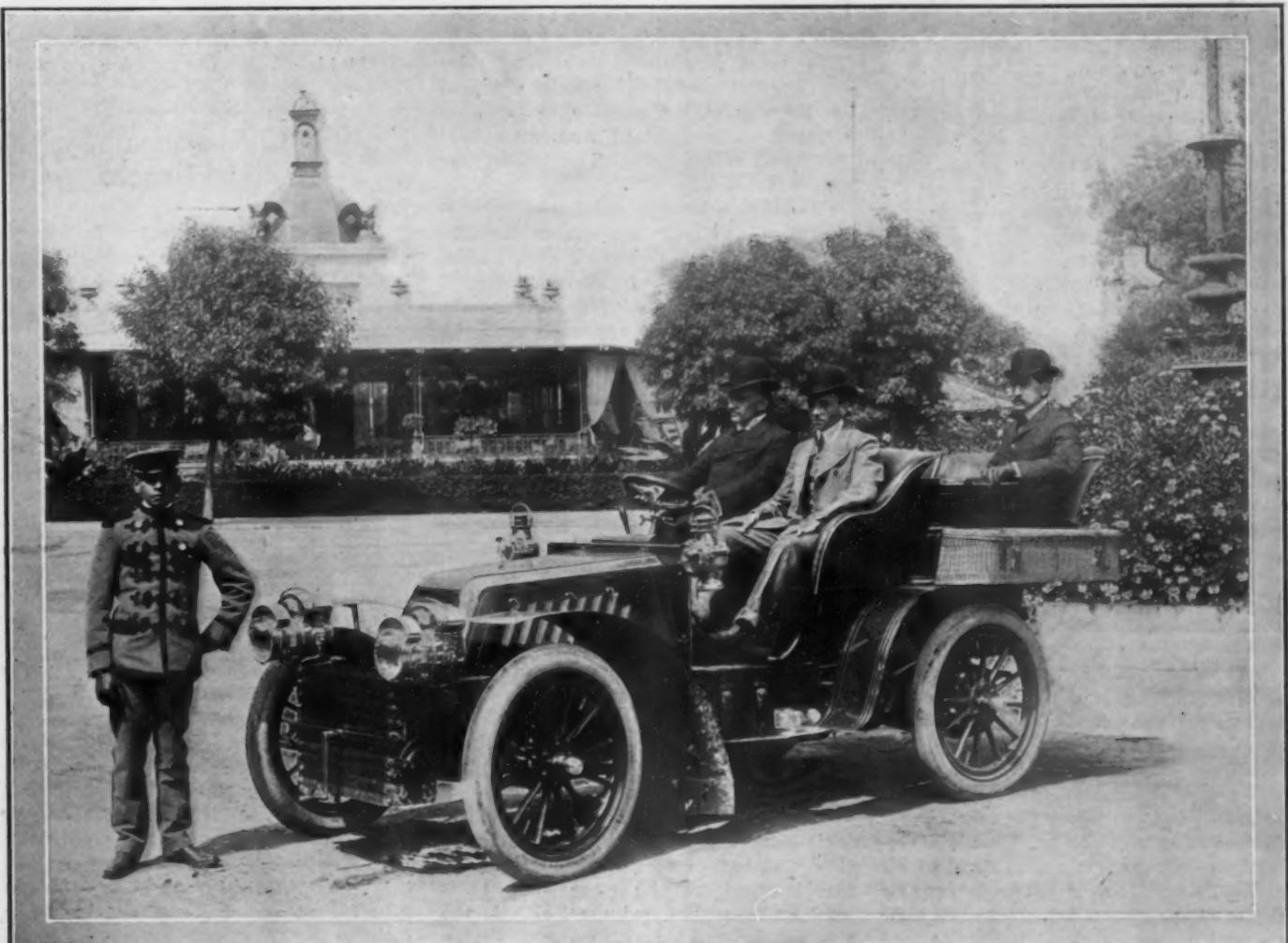
MOTORING IN THE REPUBLIC OF MEXICO.

Special Correspondence.

MEXICO CITY, April 16.—The plans of the Department of Public Works of Mexico for the improvement of the roads in the Federal District warrants the hope that within a reasonable time it will be practicable to undertake touring expeditions

tions encountered, which make it necessary to proceed with extreme caution, so that, even if one possessed a motor car of the simplest and most durable construction, one must keep an eye on the road continually or run the risk of breaking a

A few lovers of the sport have already made journeys to Pueblo and other points within a distance of 200 to 250 kilometers—but it must be said that it is a severe test for cars built for ordinary good roads, and the frequency of such attempts testi-



AUTOMOBILING IN THE CITY OF MEXICO—JULIO LIMANTOUR AND FRIENDS IN HIS COLUMBIA CAR IN CHAPULTEPEC PARK.

all over the Valley of Mexico, which offers many attractions to the motorist in the immediate vicinity of this capital. At present it is quite impossible to travel at any speed over the country roads, on account of the numerous holes and obstruc-

spring or at least giving the occupants of the car a most unpleasant bump every few minutes. The material for good roads exists, and in many cases very little repair is needed to make the highways not only passable but a joy to motorists.

fies to their being rather in the nature of "stunts" or advertisements for the automobile dealers, than genuine pleasure trips.

In spite of the existing difficulties in the way of touring, the interest in automo-

biles of real merit and good construction is steadily increasing. There is little market for cheap steam vehicles which were formerly sold because of their low price. These have been driven out by the light gasoline runabouts. White touring cars sold well in Mexico during the past year.

American touring cars of the best makes of from 12 to 24 hp. are beginning to be seen here. One of the finest cars is Julio Limantour's 24-hp. Columbia. The car is a duplicate of the Columbia which last fall made the record run from Chicago to New York in seventy-six hours, and won a gold medal in the October endurance run to Pittsburgh.

A recent distinguished acquisition to the ranks of motorists is Ramon Corral, Minister of the Interior, who runs a Winton 20-hp. car. Other owners of Wintons are Fernando de Tessa, who brought the first motor car—a Benz—to Mexico some years ago; Enrique Fernandez Castello, son of the Minister of Justice; and Gabriel Fernandez Somellera.

Electric vehicles continue in popularity for city use and are, therefore, more in evidence in the city streets and on the Paseo. Secretary of the Treasury Limantour, may be seen almost any morning driving his electric tonneau to and from Chapultepec, where he goes to inspect the progress of the park improvements, of which he is the director.

Electric coupés and victorias are coming in vogue as well as the light electric runabouts which are being used for business purposes and pleasure combined.

The Automobile Club of Mexico is in a flourishing condition financially, having about sixty share-holding members and over \$25,000 in bank, with which it will soon begin the construction of a clubhouse on land in Chapultepec Park, to be ceded by the Federal Government for the purpose.

THE COST OF GOOD ROADS.

The cost of building macadam roads depends largely, of course, on the ease with which suitable stone may be secured. Where the material has to be transported by rail for a considerable distance the cost is greatly increased. Some of the Massachusetts highways have cost \$8,000 to \$10,000 a mile, while in some other States good macadam roads have been built for \$1,500 to \$3,000 per mile.

Some friends of the good roads movement hesitate to join in the demand for national aid in road improvements because they are appalled by the enormous expense involved in macadamizing the entire road mileage of the country, but the national aid bills now before Congress do not propose to construct any particular kind of road. They simply propose to "improve the public roads," and provide for "investigations and experiments to determine the best kinds of road material and the best methods of road building."

Float-Feed Carbureter Troubles.

TROUBLE in the float feed and consequent variation in the level of the fuel in the carbureter is generally discovered by the position to be given to the air regulating valve to obtain a proper mixture. A rise of the level of gasoline will necessitate a wider opening of the air valve so as to reduce the depression in the spraying chamber; lowering of the level will necessitate partial closing of this valve so as to increase the suction.

The level of gasoline can rise abnormally in two circumstances: if the float is leaking and allows gasoline entering it to increase its weight, or if the valve controlled by the float, and which is supposed to cut the communication with the tank when the level is too high, does not function properly.

Too low a level of gasoline is generally caused by clogging of one of the pipes, presence of water in the float chamber or bad setting of the connections to the valve, and can be easily detected and remedied. This is accomplished very simply by cleaning the filter that is usually provided on the way of the gasoline to the float chamber and verifying the adjustments of the small screw provided to adjust the needle valve.

Too high a level of gasoline—the first-mentioned evil—if not shown by the necessary opening of the air inlet can be detected by the increased consumption of fuel, if care has been taken to note the quantity supplied to the tanks and the mileage run. When the cover of the float chamber is removed and the float found to be normal in weight, if the gasoline runs over the nozzle and "floods" the carbureter the trouble will be found to reside in the needle valve. In this case the surest way to fix things will be to put in a new valve unless it is found that dirt was the only preventive of proper valve seating. If it is not possible to renew the valve on account of the lack of a new one, it will be necessary to grind the old one. This will have to be done most carefully and with a very fine abrasive material. As these parts are generally made of brass, and are consequently soft, ordinary grindstone dust is usually effective.

If the float is extra heavy, however, it is plain that a leak has developed, and that it contains a certain quantity of gasoline. This can be ascertained by shaking the float close to the ear when the characteristic liquid sound will be recognized. It is now important to find the leak. If the machine is provided with water cooling, a good plan is to pour some hot water in a receptacle and dip the float in it. Bubbles of gasoline vapor will soon escape, thus showing the situation of the leak. The float may afterwards be turned in the water so that the leak is at the lowest point, vapor will be formed, which soon raising in pressure, will expel the liquid

gasoline accumulated above the leak through the latter. If the quantity of gasoline is too large to allow of a quick job, a very good plan is to drill a small hole opposite the leak and expel the gasoline through one of the openings by blowing through the other.

When the float has been emptied, if the leak is very small and the distance home sufficiently short, it can be replaced in the carbureter without stopping for repairs as it will only fill very slowly. Care should be taken to place the float so that the leak is out of the fuel if possible, and also that the float is thoroughly cooled off. If the hole is too large to allow sure return, a drop of solder as small as possible, so as not to load the float, will be necessary.

These repairs are very simple and really are very seldom needed. They are useful, however, as they can be easily made at home, and would generally be charged for substantially by the wayside "expert" should his services be called upon when out on a run.

English Combination System Railroad Coach.

Certain automobile builders in Europe are finding a new and increasing market in the equipment of special railroad coaches with independent power plants. Railroad managers there are coming to recognize the economical value of these self-propelled coaches in intermittent main line service, and in cases where it is necessary to have an auxiliary railway service through outlying thinly populated districts to act as a feeder to the main line. In the latter case, usually, the traffic is so light that it would not be profitable to employ the ordinary types of cars and separate locomotives, or to equip such branch with third rail or overhead trolley for electric traction.

A typical installation of the "combination" type was recently fitted by the Wolseley Tool & Motor Car Co., Ltd., of Birmingham, England, to a special car now in service on the British North Eastern Railway. The Wolseley company is the builder of the touring car which bears its name, and is probably the largest manufacturer of automobiles in Britain.

In the special coach, which is illustrated in the accompanying drawings, there is installed at one end an 80-horsepower gasoline motor, driving by direct connection through a clutch a 60 kilowatt 500 volt direct current generator, both being mounted on one base plate. On a platform above the main dynamo and belted to the flywheel of the engine is a small 5-kilowatt direct current generator. The duties of this little machine are threefold. The large dynamo can be disconnected from

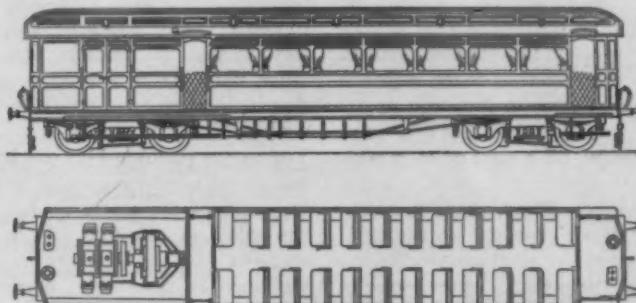
the engine and the smaller machine utilized for the purpose of charging a battery of forty cells of accumulators. It can also be run as a motor by means of current from the storage battery, in which case its function is to start the engine. In addition to these duties, in ordinary operation it is made use of to excite the fields of the large generator. This last arrangement is rather unusual, as in nearly all cases direct current machines are self-excited. In this case, however, as it is necessary to have the small machine for other reasons, its use for this purpose avoids the necessity of a compound winding on the fields of the large dynamo, as the voltage can be maintained constant by varying the current delivered to the field-winding by the small machine. The arrangement of the engine and dynamos is very clearly shown in the reproduction of a photograph of the power plant.

The storage battery has a capacity of about 90 amperes and supplies current for lighting the car as well as for the operation of the small generator when the latter is used as a motor to start the gasoline engine. On each of the trucks there is mounted a 50-horsepower 500 volt motor of the ordinary railway type, the controlling devices for which are installed in duplicate, one set at each end of the car so that the driver may be at the front end going either way.

The engine is a Wolseley four-cylinder gasoline explosion motor of the horizontal type. The diameter of the cylinders is 8 1-2 inches and the stroke 10 inches. The cylinders are arranged to work in

a single tappet. A rotary pump maintains the circulation of cooling water in the jackets, entirely separate ones being used for the cylinder bodies and heads to avoid a water joint to the combustion space. Ignition is either by magneto or battery. The carburetor is of the float-feed spray type, one jet being used for each pair of

direct connection with the driving mechanism, would be extremely wasteful of energy; as a matter of fact, however, the transmission of power by an electrical system is the most economical known at the present time. At the same time, the weight of a gasoline motor and dynamo plant compares very favorably with that



ELEVATION AND FLOOR PLAN OF WOLSELEY RAILROAD AUTO-COACH.

cylinders. Control is accomplished by throttling and changing the strength of the mixture. The normal speed of the engine is 420 revolutions a minute, but it can be increased to 480 if desirable; the horsepowers at the foregoing speeds are eighty-one and ninety-three respectively.

Any one of the four cylinders can be temporarily put out of action by means of a special device for lifting its exhaust valve. In addition to the ordinary brakes operated by hand-wheel, Westinghouse automatic air brakes are installed. Air for the automatic brakes is supplied by a compressor driven by a small electric motor. Gasoline and water tanks are

of a storage battery for producing the same electrical power, to say nothing of the convenience of operation of the former as compared with that of the latter. In addition, it is extremely easy to regulate the speed and power output of an electric motor, and the apparatus for so doing is inexpensive and light of weight.

We take pleasure in acknowledging the courtesy of the Wolseley company in furnishing us with drawings and specifications from which the foregoing description was prepared.

PLAN MAINE BEACH MEET.

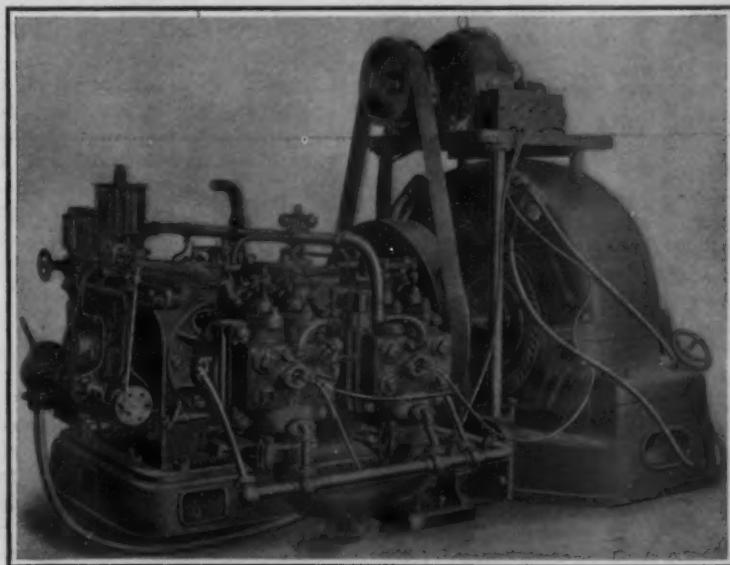
Bostonians to Investigate Beach at Biddeford—Mt. Washington Hill Climb.

Special Correspondence.

BOSTON, April 25.—There is some talk here of holding an automobile meet on Old Orchard Beach, near Biddeford, Maine. The beach is nine miles long, and upward of 500 feet wide, and is uniformly hard. It is much used for carriage driving, and several automobilists have used their cars on it with great delight and have made some fast runs up and down its smooth surface.

Some of the Boston men who are familiar with racing conditions are planning to make a special investigation of the beach as a possible speedway. Several persons are to be consulted regarding it, and a party will be made up to go down there before long and try the beach with high-powered cars. Among them, it is expected, will be H. L. Bowden, Horace B. Hills, Jr., Harry Fosdick and others.

The possibility of holding a hill-climbing contest on Mt. Washington in the White Mountains is also being talked of in this city. It is proposed to have the competition take place over the carriage road up the mountain early in July, before the start of the St. Louis tour. It is said that an exploration party will leave Boston in automobiles about the middle of June to attempt the climb and make preliminary arrangements for the contest.



WOLSELEY 80-HP. MOTOR CONNECTED TO 500-VOLT GENERATOR.

pairs, two crank pins set at 180 degrees apart being used, thus obtaining two impulses at every revolution. The cylinders and heads are cast separate. Two inlet and two exhaust valves are provided for each combustion chamber, each pair of corresponding valves being operated by

provided of sufficient capacity to enable the car to run continuously for five hours, so that on one filling a run of 150 miles can be made.

At first thought, it might appear that a system of this description, in which there are two separate motors, one of which has no

“Flash” Steam Generating Systems—I.

Explanation of the Principles of Construction and Operation and Details of Well-Known Types.

I.—GENERAL PRINCIPLES.

THE most characteristic feature of the ordinary fire-tube or water-tube boiler, viewed from an engineering standpoint, is its capacity for storing energy. This is due to the fact that when water is confined at a high temperature and pressure, if the pressure be reduced in any way, such as by drawing off a part of it, a portion of the remainder will pass spontaneously into steam. The higher the pressure in a boiler, the higher will be the temperature necessary to produce ebullition. If, for example, the pressure is 205 pounds gauge, the boiling point will be 389.6 degrees Fahrenheit. If water or steam is drawn off until the pressure falls to 150 pounds gauge, the temperature of the water and steam remaining will fall to 365.7 degrees, the heat represented by this difference in temperature having been abstracted from the water by the evaporation of a portion of it into steam at 150 pounds. If more water or steam is drawn off, no additional heat being supplied, the pressure and temperature will fall progressively, the latter becoming 212 degrees at atmospheric pressure; and by this time about 17 per cent. of the water originally existing at 205 pounds pressure will have expanded into steam of over 1,600 times the volume of the water.

For this reason, the ordinary steam boiler acts as an equalizer between the heat generated by the burner and the steam consumed by the engine; and a steam carriage with this kind of boiler is able, by drawing on its reserve of heat, to make bursts of speed which it would be impossible to maintain for any length of time. The undeniable advantage of being able to do this prevented the earlier experimenters with steam vehicles from seeking for any important modification of the accepted types of stationary or marine steam generating plants, and the familiar forms of steam automobile boilers are the result. In applying this system, the fire was naturally regulated according to the steam pressure, and the water supplied to the boiler according to the rise or fall of the water level in it. Today the former is controlled automatically, and the latter (usually) by the operator, since it is inconvenient to make a float regulator large enough to be positive in its action on account of the presence of sediment and scale.

Although the ordinary steam boiler is satisfactory for stationary or marine service, it has been found to have certain drawbacks in automobile work, which, although not by any means vital, have been sufficient to warrant a search for some other system. Of these, the first is the fact that the boiler is badly damaged,

if not destroyed, by going dry; second, the danger of rupture, which, although it has been reduced to a minimum in the best modern machines, still exists; third, a serious loss of steaming capacity occurs when hard water is used, which is largely due in the fire tube boiler to the closeness with which the tubes are set together. The use of fusible plugs has minimized the danger of actual injury to the boiler from stoppage of the water feed; but, owing to the small capacity of this class of boilers and the very rapid evaporation, constant vigilance is necessary, even though the price of negligence may be nothing worse than the inconvenience of replacing a fusible plug and firing up again.

The development of the flash system of generation has been due to an endeavor to avoid these drawbacks. It has appeared in several forms, with marked differences in detail. It may be said, however, to comprise essentially the use of a generator in the form of a series of small tubes connected end to end, the water being forced under pressure into one end of the series and emerging from the other as superheated steam. There is no circulation, properly speaking, since the water passes at once and completely into steam at some point in its travel through the tubes. The most characteristic form of flash generator is that in which the volume of water contained is so small as virtually to eliminate the storage capacity which marks the ordinary steam boiler. Such a generator, having, as it naturally does, very thick-walled tubes, is obviously safe from danger of rupture or injury from lack of water, since tubes of this description will stand an immense amount of heat without injury. Again, it has been found in practice that the rapid travel of water and steam through the tubes prevents lodgment of solid deposit, which, instead, is carried on through the engine to the exhaust. It will thus be seen that theoretically the flash system overcomes the three most important drawbacks of the ordinary steam boiler. In addition, it lends itself with peculiar readiness to high pressure and to superheating, both of which features are essential to high economy.

With this much for the flash system in the abstract, it will be of interest to examine it more in detail. Obviously, the smaller the quantity of water contained in the reservoir of a machine the more limited will be its capacity for a spurt, or, to present it in another way, the generator and burner must both be made large enough to supply continuously the maximum steam demand. In this respect, the flash system presents a striking parallel to the internal combustion motor, which likewise

has no storage capacity. Again, the smaller this storage capacity the greater will be the need for instantaneous and exact regulation of the fire and water feed to meet varying conditions. That is to say, assuming the extreme case of no storage capacity whatever, it is evident, first, that every ounce of steam must be produced just when it is ready to be used and must be used immediately it is produced, and, second, that for economy of fuel the regulation of the fire must correspond exactly to that of the water feed. Theoretically (and also practically within the working capacity of the burner) an ounce of fuel will evaporate a given quantity (say 12 ounces) of water under all conditions, and this ratio must be adhered to more closely the smaller the capacity of the generator in water or tube walls for absorbing fluctuations of temperature.

Now, it will be evident that, if the fire could be augmented or reduced just simultaneously with the change in the water feed, the storage capacity might be as small as desired without impairing the ability of the generator to produce instantaneous variations in the rate of steam production. Practically, however, it is necessary for the regulator to act, not on the fire direct, but on the liquid fuel supply; and consequently a certain lag always occurs, due to the interval between a change in the rate of feed of the liquid fuel and in the vaporization of it. Consequently it is necessary in practice to give the generator a certain minimum storage capacity, since otherwise it would be nearly impossible to operate the car, because a momentary fall in pressure would mean the stoppage or slowing down, not only of the car, but of the power driven pumps as well.

Finally, it will be noted that the practical result of a strictly hand to mouth supply of steam is that the speed of the car cannot be controlled by a throttle valve, the effect of which is to cause the engine to use only a portion of the available steam; but that this must be accomplished by varying the amount of steam actually generated, this variation becoming effective on the engine either through a change in the steam pressure or a change in the point of cutoff, or both.

II.—THE SERPOLLET.

To Leon Serpollet of Paris is due the credit of being the first to grasp clearly the principles here enunciated, and to embody them, after patient and indefatigable labor in an untried field, in a form at once logical and successful. The earlier Serpollet generators were made up of tubes flattened and creased lengthwise so as to give a U-shaped cross-section. Consequently they had an almost infinitesimal water space and at the same time the full heating surface of the original tube. Partly for durability, perhaps, and still more because the lack of storage capacity in some form was found to have serious

practical drawbacks, the walls of these tubes were of abnormal thickness, the hot metal thus providing in itself an equalizing influence.

Kerosene was the fuel, and an exact proportion between fuel and water feeds was secured by feeding both burner and generator by pumps of suitable sizes, and by operating both of these pumps by a single lever with the fulcrum so located as to give a short stroke to the oil pump and a longer stroke to the water pump. To vary the rate of speed, the lever was operated from the engine by a stepped cam, giving a longer or shorter motion at the will of the operator. The engine, to avoid anticipated difficulty with stuffing boxes and lubrication due to hot and dry steam, was made with four single-acting cylinders, opposed

tion of steam may cease as instantaneously as it begins, if the car be stopped for any cause for more than a few moments, or if a sudden hill or the like be encountered without due preparation. This feature will be explained presently more at length. Meanwhile, it may be noted that in the English Gardner-Serpellet cars, and also in the French machines, the infinitesimal tube section has been abandoned.

In the diagram, Fig. 1, herewith, the essential features of the Serpellet system are indicated. *A* represents the generator, in which the water enters the coils at the bottom; *B* is the burner, which consists of a number of separate Bunsen burners fed from a common mixing tube; *C* is the variable feed stroke pump lever, acting on the water pump, *D*, and the fuel pump, *E*; *F*

the tank or into the air, as determined by the position of a three-way valve between *K* and the tank. In a certain sense, this relief valve resembles the bypass valve of the ordinary steam carriage system, since, when it is opened, no water goes to the generator. It differs from it, however, in that there is no check between *K* and the generator; so that the result of opening *K* is not only to bypass water from the pump into the tank but also to permit the generator to discharge its own contents backward through *K* into the tank until the steam pressure falls enough to close it. As will be seen later, although this is in a sense necessary to keep the fire from producing an excessive pressure from the water already in the tubes, still it has the disadvantage that, when *K* closes and pumping begins again, the water in the lower generator coil is cold instead of hot, and the car must be driven slowly until equilibrium is again established.

The method of operating the Serpellet car follows directly from the characteristics of its generator and feed system. Since the stepped feed cam is worked from the engine, it causes the pumps to deliver water and oil rapidly or slowly, according to the speed of the car, and at a rate depending upon which step of the cam is operative. Consequently, a change in speed of the car does not affect the quantity of steam generated and used per stroke of the engine. Therefore, as above implied, variation of the pump stroke is used only to modify the supply of steam per stroke, or in other words, to modify the torque. If the valve cut-off be left unchanged, the effect of shifting the pump cam will be to increase or reduce the steam pressure. Within limits, this is a practicable method of regulating speed, and is, of course, necessary when the speed is very slow. On the one hand, extremely high pressures are unduly severe on the engine, and on the other, it is better to use a short cut-off when practicable than to reduce the steam pressure. In regular running therefore, the rule is to keep the steam pressure approximately constant at 300 pounds and to vary the torque by means of the cut-off. Coincidentally, of course, the pump stroke must be varied to suit the steam production to the demands of the cut-off.

Such is the rule for running on good roads—to shift the cut-off and the pump stroke simultaneously. But when the increase of torque is demanded, not for an increase of speed, but to overcome the resistance of sand or to climb a hill at (possibly) a much slower speed, it becomes necessary to anticipate the demand for steam by increasing the pump stroke *before* the retarding force is reached. This is important, since it allows for the inevitable lag between pump and fire, and also because it permits the coils to accumulate a good supply of water on which the fire can act. In other words, it gives a small reserve on which to draw and furthermore increases the effective heating surface in

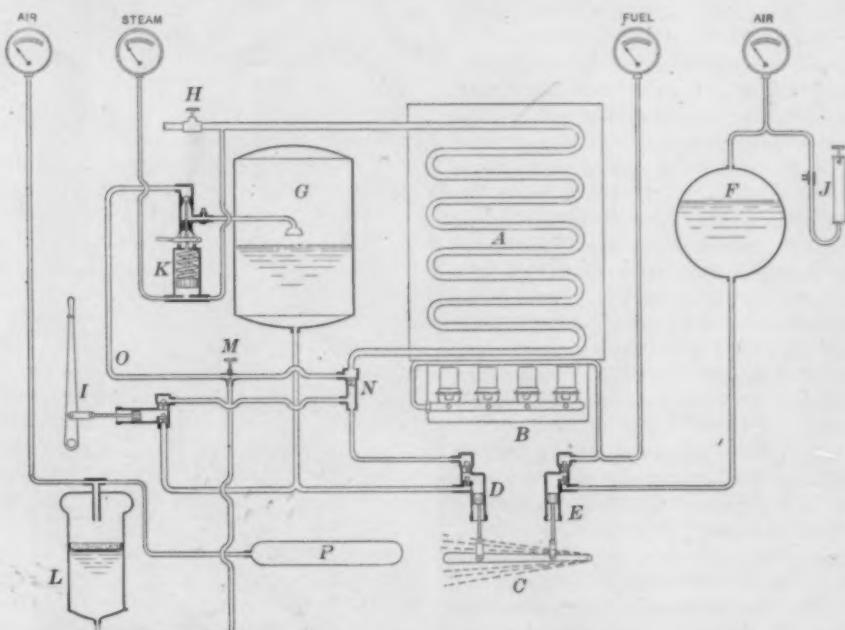


FIG. 1. DIAGRAM OF SERPELLET FLASH STEAM GENERATING SYSTEM.

horizontally in pairs and having trunk pistons and poppet valves worked by cams. The cut off was variable, and reversal was effected by shifting the cams, which were cut with angular faces and duplicated for the reverse motion. The throttle was not used except for starting and stopping, all regulation of speed and torque being effected either by changing the valve cut-off or by increasing or decreasing the feed pump stroke, thus varying the supply of steam.

With but one exception, all of the essential points just enumerated are still used today. The exception is in the form and size of the generator tubes. Bulk for bulk, steel has but 0.93 of the heat capacity of water at the same temperature; and it weighs 7.8 times as much. One result, therefore, of the use of the U-shaped tube is to make the generator coil weigh four to six times as much as is necessary. On the other hand, the merits of this tube as an "instantaneous" generator of steam are largely offset by the fact that the produc-

tion of steam may cease as instantaneously as it begins, if the car be stopped for any cause for more than a few moments, or if a sudden hill or the like be encountered without due preparation. This feature will be explained presently more at length. Meanwhile, it may be noted that in the English Gardner-Serpellet cars, and also in the French machines, the infinitesimal tube section has been abandoned.

A represents the generator, in which the water enters the coils at the bottom; *B* is the burner, which consists of a number of separate Bunsen burners fed from a common mixing tube; *C* is the variable feed stroke pump lever, acting on the water pump, *D*, and the fuel pump, *E*; *F*

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proportion to the length of coils actually wet. For this reason a full generator will make steam faster than one half full, rate of fuel and water feed remaining the same. Less heat is spent in superheating, but for the moment this is of less consequence than an adequate supply of steam. This is an important point, because with the rather short total length of coil in the Serpollet arrangement, and the limited heating surface, no amount of fire will avail to produce steam rapidly unless the coils be fairly well filled.

In the same way a marked decrease in the demand for steam must be anticipated, otherwise, with a full generator and limited consumption, the pressure will rise excessively before equilibrium is again reached, and hot water be needlessly discharged through *K* into the tank.

Since the proper way to manage a Serpollet car just before stopping, is to have very little water in the generator, it follows that, to gather speed after a stop, it is necessary to force additional water into the coils by means of the hand pump. This upsets the balance between fuel and water feeds, and tends to produce wet steam; but it gives a plenty of it, and as the coils have been kept hot by the air pressure in the oil tank, they have a small reserve on which to draw.

The self-starter *L* consists of a reservoir partly filled with compressed air at normal steam pressure (300 pounds) and communicating with an air flask, *P*. When the car is started from rest by opening the throttle, *H*, the drop in pressure allows water from *L* to enter the generator coils until equilibrium is reached between air and steam pressure. As the latter rises, water from the pump goes to *L* to supply the loss. A floating disc of leather, on which is a layer of oil, prevents absorption of air by the water.

Of the practical working of this self-starter the writer is not informed; but it seems apparent that it is intended to be cut off by valve *M* when the car is under way, as it would otherwise introduce a disturbing element into the uniformly proportional feed of oil and water.

(To be continued.)

MOTOR BOAT LECTURE COURSE.

Special Correspondence.

DETROIT, April 23.—Following the opening of the Y. M. C. A. course of instruction in automobile construction and operation here, the racing committee of the Detroit Yacht Club has announced its intention of starting a series of lectures on the motor boat in all its phases, with possible instruction on the gasoline engine to supplement them. It is hoped to secure H. M. Coffin, of the Olds Motor Works, who is now giving the Y. M. C. A. course of instruction, to deliver the lectures on the explosion engine. The yacht club course will not be started, however, until the close of the sailing season.

Motorcycle Belts.

By AN EXPERT.

The two features urged against belts as a transmission drive for motorcycles is that they slip and stretch, the former generally being considered as resulting from the latter. This is not always true, as a belt that has not the proper "face" will always slip more or less however tight.

Stretching may be prevented by the proper treatment of the belt before it is used. First it should be made thoroughly soft and pliable by the repeated application of either castor or neats-foot oil or any of the liquid dressings put up and sold for the purpose. Having thoroughly "filled" it with the dressing, it should now be stretched. If a suitable place is at hand one end can be fastened up and from the other a weight suspended of from 200 to 300 pounds.

Where weights or a convenient place to stretch the belt are not available, a mechanical stretcher can be devised with the aid of a long bolt and a length of wire. One end of the belt should be fastened securely to the side or top of a bench and to the other end the head of the bolt can be secured by the wire. Then by passing the bolt through a securely fixed lug and tightening up the nut on the other side any required amount of stretch can be secured. Great care should be taken that the belt is not stretched to destruction. The other method is the better, as it is really automatic.

The stretching process should be gradual, continuing for perhaps a week. In some belts an elongation of an inch to the foot has been noticed.

The belt is now ready to use and should be put on the motorcycle without delay. If it is allowed to lie around it will shorten up again. Fastening methods are many and of varied efficiencies. Rawhide is good, but the joint at which it is used will lie flat to the pulley and slip is the result. Hinges are good while they last, but can hardly be replaced on the road, and it is well to avoid them. Simple staples of No. 17 gauge soft German silver wire placed a quarter of an inch apart with the ends twisted together on the top side of the belt will never break or pull out and are easily put in. Holes can be drilled in the belt at home, so that should it become necessary to shorten a belt while on the road away from home all that has to be done is to cut off a piece and put staples in the next set of holes. With a double belt made of good oak-tanned leather and treated as described it ought not to need to be shortened more than two inches in a season.

Idlers should be avoided if possible. They always act as a more or less powerful brake and by the backward bending of the belt tend to break the fibers of the leather, causing stretch and also tending to split the cement which holds the two parts of the belt together.

Stitching weakens a belt and conduces to slipping by preventing close contact with the small pulley. The proper treatment of the belt before using and the use of waterproof cement will prevent splitting better than the stitching, which has a further disadvantage in that it stiffens the belt.

On the road when a belt commences to slip it will generally be found that the surface is dry and hard. This is easily remedied by the application of solid belt grease procurable at any hardware store. A dab or two at different points will be sufficient, as the pulleys soon spread it.

If, from running in the rain, the face of a belt becomes embedded with tiny sharp stones they should be removed by scraping; a trouser guard is a very convenient instrument for this purpose.

Every few hundred miles a belt should be wiped over with a rag wet with kerosene to remove the accumulation of road dust and grease.

In buying a belt see that it will lie in a straight line when laid out flat on the floor and see that it is of equal thickness on both edges or it will have a tendency to run off the pulleys. Get a double belt and put it on so that it will run in the same direction as the joined places. A good belt is made of many pieces taken from the best parts of the hides. A double belt is more efficient than a single one in the ratio of ten to seven.

A very good practice in vogue in Europe is to protect the belt from the sand and dirt lifted by the rear tire, by a side piece attached to the mudguard and reaching below where the belt runs onto the rear pulley.

Always see that the pulleys are in line and the ends of the belt laced together evenly or it will run off. The problem of motorcycle power transmission is not fully solved, but the wide flat belt in good condition comes as near to a smooth even drive as anything yet used and with a fair amount of intelligent attention will give very satisfactory results.

MOTORCYCLE NOTES.

Experiments in carrying dispatches by motorcycles were conducted recently by the War Minister at Vienna. The distance selected was 190 miles, over rough ground. Four relays were used, and the shortest time made was 8 hours and 28 minutes. It was estimated that cavalry relays would have taken twenty hours.

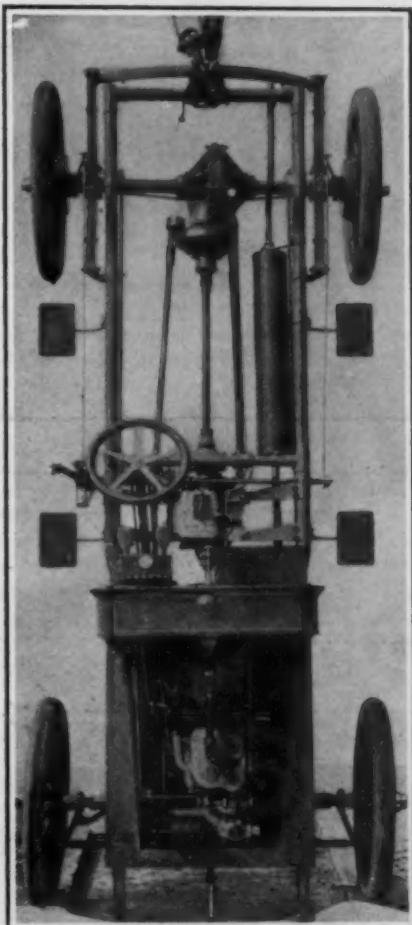
The Motor Club of St. Paul, Minn., at its annual meeting, elected the following officers: C. L. Edge, president; U. G. Brown, vice-president; A. J. Krank, treasurer; J. M. Hammes, secretary. The club expects to increase its membership by at least fifty during this season.

The German government will soon begin the manufacture of motorcycles for army use in one of its gun factories under the supervision of its own experts.

Renault 1904 Model.

A very interesting, though brief, description of the new four-cylinder 14-horsepower 1904 model Renault car is given in a recent number of *La Vie Automobile*, from which the accompanying illustrations are taken.

The especial feature of this machine is the disposition of the radiator and the means used for driving air through it. It differs from that described in these pages last September, in the direction of greater simplicity with equal efficiency. The radiator is located, as in the above-



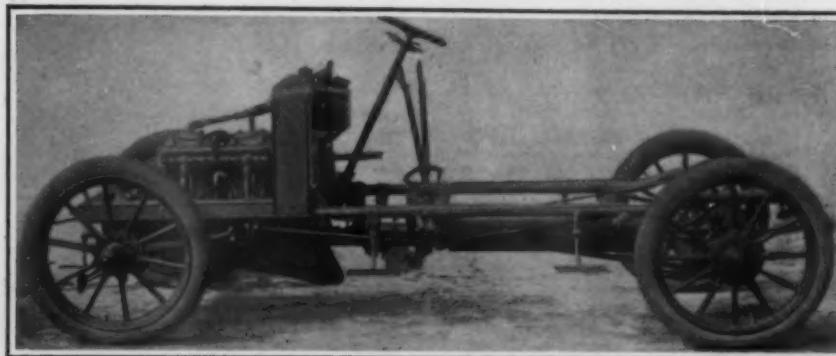
TOP VIEW OF RENAULT CHASSIS.

mentioned arrangement, at the back of the bonnet just forward of the dash, but the inner wall of the bonnet, between which and the outer wall air was drawn by the fan-shaped spokes of the flywheel, is discarded. Instead, the bonnet is narrowed to a width just sufficient to cover the motor, while the radiator spreads to the full width of the dash. This radiator is made up as shown in Fig. 3, of shallow top and bottom tanks connected by vertical flanged tubes; and back of these tubes there is an open space of about two inches, between them and the dash. Consequently the wind of travel strikes freely through the two exposed ends of the radiator, on each side of the bonnet, and, doubling on itself, returns in a forward

direction between the tubes within the bonnet.

This process is immensely accelerated by making the bonnet air tight and put-

stead of the usual Renault width of 60 cm., thus permitting the use of a wide body, affording the maximum of comfort. The raising of the side tubes over the rear



CHASSIS OF 1904 RENAULT, SHOWING RADIATOR AT REAR OF ENGINE.

ting fan blades on the flywheel rim, past which to the rear is the only egress for the air entering the bonnet from the radiator. Under the motor is a pressed steel pan *N*, Fig. 3, which is extended to surround the flywheel, leaving a circular opening of the diameter of the latter over the fan blades *S*. Consequently a strong blast is created, which effectually cools the radiator even when the car is standing still.

In Fig. 3, *AA* represent the exposed ends of the radiator where the air enters; *D*, *E*, *F*, *G*, the course of the circulating water from the top of the motor to the upper tank, down through tubes *J* and back by gravity to the motor jacket, no pump being used; and *H* the air space back of the radiator tubes, in which the air doubles on its course. The arrows showing the water circulation are dotted; the arrows showing the path of the air are numbered in order.

It will be seen that the motor is practically protected from the road dust thrown upon it by the ordinary front radiator and fan, while at the same time the radiator is protected from accidental damage in traffic, and these ends are obtained without the use of any moving

axle, permitting a low footboard and at the same time ample clearance over the rear axle, will also be noticed.

1,039-MILE NON-STOP RUN IN 39 HOURS.

One-half of the 2,000-mile round trip the length of Great Britain, from Land's End, in southwest England, to John O' Groats in the extreme north of Scotland, was completed by S. F. Edge, on the morning of April 26 in thirty-nine hours, according to a despatch to the *New York Sun*. The distance of 1,039 miles had been covered without a stop, Edge and a companion alternating in eight-hour shifts at the wheel. The previous record was fifty-four hours.

Edge, who is driving a Napier car, is undertaking to make the round trip in 100 hours without stop.

DR. C. T. CLIFFORD, of Lowell, Mass., has expressed his intention of accompanying Charles J. Glidden on the first 3,000 miles of the latter's transcontinental tour. The start will be made at Liverpool about the middle of May. Dr. Clifford will use a single-cylinder 6-horsepower Knox which he has been using for the past two years.

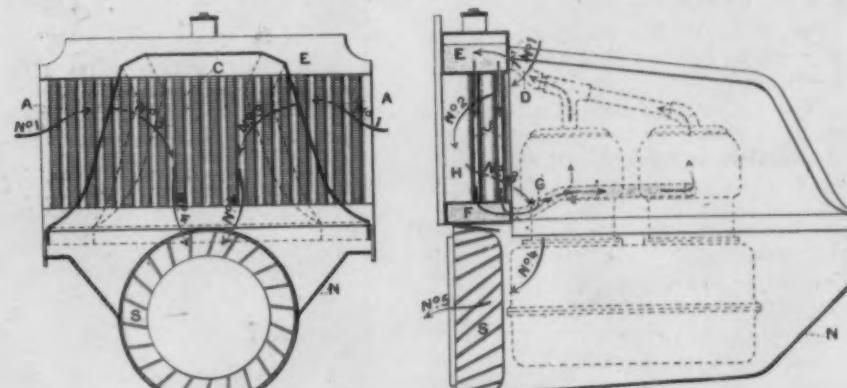


FIG. 3.—SHOWING FLYWHEEL VANES AND DIRECTION OF AIR AND WATER CURRENTS.

parts whatever beyond the flywheel itself.

The particular chassis shown is built for a "de luxe" car, and back of the front wheels it is widened to 85 cm. (34 in.) in-

and expects, by running "overtime" to accomplish the same daily mileage as Mr. Glidden, whose car will be capable of a higher speed than Dr. Clifford's machine.

Flanged Steel Tires for Inspection Car.

The little railroad inspection car shown in the photograph herewith reproduced, was built for the president of one of the railroads of Alabama, and was shipped to him recently. The novel feature consists

tire problem at least in the production of cars to meet this demand.

As a railroad inspection car the Buckboard, with its extra rims, has the advantage that its very light weight allows of its easy removal from the tracks by one man, while the rims can be removed quickly, placed in the special carrying crate provided on the rear platform, and the

durable Olds motive power equipment. The motor develops 4 1-2 horsepower, quite sufficient to handle the car when loaded with four persons. Such cars are intended for use not only on the regular lines of steam roads, but on electric roads, such as are engaged in interurban service.

Except when starting or reversing no gears are in use in the transmission, the drive being direct. The motor can be started from the front seat by a side crank.

In construction the frame is steel tubing with oak sills. The wheels are pressed steel, 20 inches in diameter, 4 1-2 wide in the extreme and with a one-inch flange. Gasoline and water tank capacity for 100 miles is provided. A powerful braking system applies brakes to the driving sprocket and to the rear wheels at the will of the operator.



BUCKBOARD AUTOMOBILE, FITTED WITH STEEL RIMS FOR RAILROAD USE.

of the cast steel flanged rim, made on the outside to fit the rails and having on the inside a curved surface to fit the periphery of the tire. When the tire is inflated, this auxiliary rim is held in place very rigidly. Under test it has been found that 600 or 700 pounds side pressure cannot start it; in fact, the wheel itself can be crushed before it can be pushed out of this rim. In order to remove it, the tire has to be entirely deflated, when it can be lifted off, as shown in the second engraving, without difficulty with the aid of a screwdriver or similar instrument.

The machine will be recognized as an Orient Buckboard. Tests of the steel rims, made by the manufacturers of the car, the Waltham Manufacturing Company, seem to indicate that the flanged rims will not only prove satisfactory for converting a small automobile into a railroad inspection car (means also being provided, as shown, for holding the steering wheels to a straight course), but that they may find a greater field of usefulness. In military operations, for instance, any number of automobiles, small or large, could be quickly equipped with such flanged tires and run with men and supplies on the railroad to any point and then, the auxiliary tires being removed, continue to any place away from the tracks over the ordinary wagon roads.

Also, there is a growing inquiry for automobile coaches or busses to run on rails and transport from a dozen to a score of passengers. Flanged steel tires similar to those shown might solve the wheel and

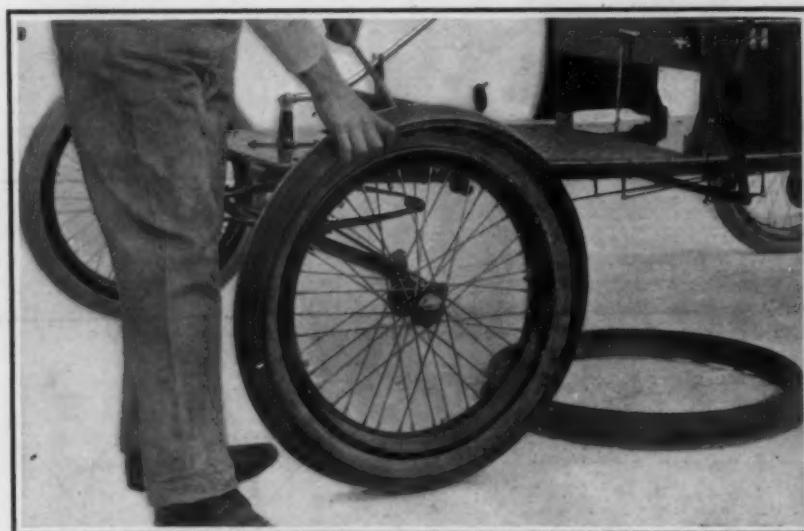
inspector drive anywhere through city streets that business calls him. Fuel for a run of 100 miles can be carried in the tank and a speed of thirty-five miles made on the rails.

Application has been made for patents on the new double-rim construction.

Another type of railroad inspection car

Origin of Babbitt Metal

An erroneous idea appears to prevail in regard to the invention of Babbitt metal, says the *Metal Industry*. Although Isaac Babbitt was the inventor of the method of using soft metals in journal boxes, his patent specification makes no claim on the alloy itself, but simply on the method of holding the soft metal in place. Isaac Babbitt was born in Taunton, Mass., on July 26, 1779. He learned the trade of goldsmith, and in 1824, in his native town, made the first Britannia ware produced in the United States, but this enterprise proved unsuccessful. He then removed to Boston and entered the employ of the South Boston Iron Works, and in 1839, while an employe of this establishment, produced the invention which has perpetuated his



METHOD OF APPLYING THE STEEL RIMS OVER PNEUMATIC TIRES.

is shown in the accompanying photograph of a car recently delivered to an eastern railroad by the Olds Motor Works. This car, so far as the body and wheels are concerned, is built exclusively for railroad inspection work and has the simple and

name. For this invention he was given a gold medal from the Massachusetts Charitable Mechanics' Association, and afterward Congress granted him the sum of \$20,000 as a reward. In 1844 the invention was patented in England and in 1847 in Russia.



OLDS GASOLINE INSPECTION CAR IN USE ON BOSTON AND ALBANY ROAD.

After devoting some time to the production of metals he engaged in the manufacture of soap, so that his name has become almost a household word. He died insane at the McLean Asylum, Somerville, Mass., on May 26, 1862.

American Populaire Car.

The American Populaire car, manufactured by the American Automobile and Power Co., of Boston, Mass., which is illustrated in the engraving herewith, possesses two new features of particular interest. The body is of unique design, the method of entrance being through the front instead of in the ordinary way from behind. In order that this may be possible, the front seat is of the divided pattern, and either side may be tilted forward

to allow free access to the rear seats.

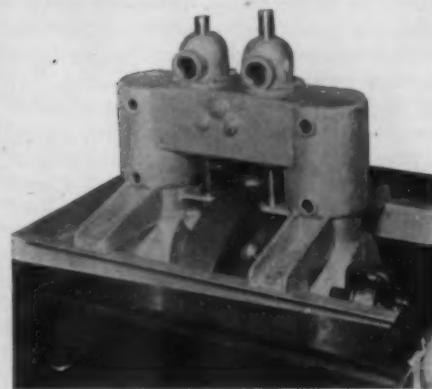
The other point of main interest is the rather novel motor used to drive the vehicle. It is called the "Mosher" engine. Instead of the ordinary poppet valves for admission and exhaust, piston valves are used. The engine is of the two-cylinder vertical type, the diameter of the cylinders being 4 1/2 inches and the stroke 6 inches, and it develops 12-brake horsepower. From the engraving herewith, it may be seen that the cylinders, main valve chambers, and upper portions of the crankcase are cast integrally. Tubular valve stems are used, provision being made to allow air to circulate automatically through them. A secondary shaft actuated by means of gears from the main shaft carries cams which operate the valves. The method of suspending the engine is also novel. The

feet used to attach it to the frame are about midway of the engine casting, so that the lower half of the crankcase can be readily removed for inspection of the bottom bearings.

The speed of the engine is controlled by means of spark adjustment and by throttling the mixture, both of which are operated by hand levers attached to the steering post. The cooler is made of tubing with corrugated spiral copper fins bound together with light steel supports. Water is forced through the engine water jackets to the cooler by means of a pump of the Browne and Sharpe positive type driven directly from the engine shaft.

The system of ignition is of the jump-spark variety, using double vibrating spark coils mounted on the dash. The time of ignition is controlled by the driver from the seat by means of a rod to the breaker cam. The transmission is of the sliding gear pattern having three speeds forward and reverse, the range of speeds being from seven to thirty miles an hour. The compensating gear is of the standard Brown-Lipe spur-gear type and is equipped with two double-acting brakes.

The frame is made of heavily braced



MOSHER ENGINE WITH CENTER FLYWHEEL.

angle iron, carrying tubular axles. Roller bearings are used in the rear and large ball bearings in front. The springs are of the elliptical type, five leaves being used of oil-tempered steel. The wheelbase is 84 inches and the tread 56 inches. The weight of the machine is 1,200 pounds.

New National Tonneau.

The National Motor Vehicle Company, of Indianapolis, Ind., has proved, by the production of the National gasoline touring car, that it is quite as well able to cope with the problems inseparable from the building of a successful machine propelled by a hydro-carbon motor as it is to turn out a fine electric vehicle. The particular car referred to is its 20-horsepower tonneau, one of which was received by the eastern agents of the National Company, Homans & Schulz, 134 W. 38th St., New York, a short time ago, and for which a number of orders have already been booked. A 40-horsepower model is expected shortly.



THE AMERICAN POPULAIRE CAR EQUIPPED WITH 12-HP. MOSHER ENGINE.

Probably the first thing to impress one who examines the car will be its silent and vibrationless running. So well is the motor balanced, so thoroughly is the exhaust muffled and so completely has noisy mechanism been eliminated that when on the road with the high gear engaged, the vibration of the engine cannot be detected, and the only sound heard is the rhythmic buzz, buzz of the vibrators. The absence of noise is due in a large measure to the fact that there are no chains used in any part of the machine. The power is transmitted to the rear axle through a telescoping shaft, with Cardan joints, and bevel gears running in oil, the gearing having been designed especially for this service by the National company.

The frame is of pressed steel of U-section, with the opening inward. It is braced by four steel cross ties, and all joints are brazed and riveted, assuring ample strength. The side members of the frame are tapered so that, while there is ample strength where it is required, there is no unnecessary weight where the strain is slight. The corners are re-enforced by steel braces, brazed and riveted in place. In cases where it is necessary to pass bolts through U-section of the frame, distance pieces are placed between the two sides, so that the frame cannot be distorted by screwing home the nuts.

The rear axle is of the live type, and is made of 1 5-8 inch machinery steel placed inside a steel tube having a thickness of wall of 3-8 inch. Ball bearings are used on each side of the differential—located midway between the wheels—and at the outer bearings. The wheels are of wood, 30 inches diameter, shod with 3 1-2 inch detachable tires. The front axle is dropped to make room for the motor, and is of steel tubing 2 inches diameter by 3-8 inch wall. Front and rear wheels are of the same size, and all are provided with ball bearings.

The motor, placed under the hood of the latest German type, is a special design of the well-known Rutenber, made by the Western Motor Company, Logansport, Ind., and to it is due in a large degree the fine running of the car. The four vertical cylinders, having a bore of 3 3-4 and a stroke of 4 inches, are cast separately and mounted on an aluminum crankcase, and the cylinders, pistons and rings are finished with extreme accuracy. The crankshaft is 1 3-8 inches diameter and has five bearings. The valves, placed side by side, are all mechanically operated, and the spark plugs are screwed into the valve chambers, where they are kept cool and clean by the incoming charges. The shaft carrying the valve operating cams, is inside the crankcase of the motor, where it is always lubricated and protected from injury and dust. A plug is placed in the valve chamber directly over the top of each valve, the removal of which permits the valve to be taken out for inspection or grinding. A single carburetor of the float-feed type supplies gas to all four cylinders, and is

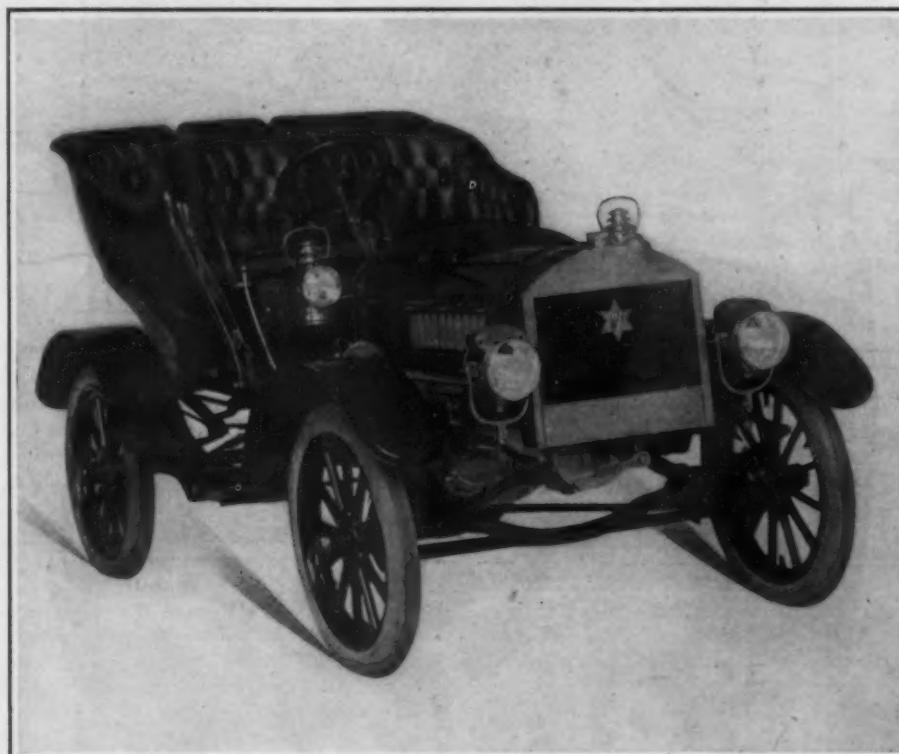
placed on the left side, the same side as the valves, and connected to the intake valves by tubing of liberal diameter.

Splash lubrication is used in the crankcase, to which oil is supplied from a reservoir in which air pressure is maintained by utilizing the crankcase as a pump. The heat of the air from the crank-chamber keeps the oil at a constant temperature, ensuring a fixed rate of feed with a given valve opening. Sight feed glasses are placed in the oil tubes, so that the flow of oil can be observed, and it is regulated by a handle on the dash.

The transmission is of the sliding gear type and gives three forward speeds and reverse. The drive is direct on the high speed, and all gear changes are made by a

and the accelerator takes the usual form of a foot button. It is worthy of note that the car may be run at a speed of five or six miles an hour on the high gear, by the proper regulation of the spark and throttle. This makes the machine a very handy one in crowded streets, as speed is picked up, when necessary, with great promptness.

The braking system comprises three brakes. A pedal operates a band brake on the driving shaft, and this brake is the one ordinarily used. The band brakes on the rear hubs are connected through an equalizing gear with a lever located beside the speed lever and are used when an extra powerful braking action is necessary. By means of a ratchet the brake



NATIONAL 20-HP. GASOLINE TOURING CAR, FITTED WITH RUTENBER 4-CYLINDER MOTOR.

single lever on the right. A locking device prevents changes of gear while the clutch is engaged. The gear case has its lower part of cast iron and top of aluminum, and is filled with oil.

Steering is by wheel and worm-gear. The wheel tilts to allow the driver easy ingress and egress. An interesting feature of the steering gear is that the arms on the knuckles are double, one arm from each knuckle extending forward and the other aft. By connecting the two forward arms by one rod and the rear arms by another, a very rigid and strong arrangement is obtained, and one that will not readily develop back-lash. The breaking of one rod will not in any way disable the steering, the remaining one being ample to take the strain.

The lever by which the spark is controlled is placed on the steering wheel column, and works on a notched sector,

can be kept on as long as may be desired, thus providing for stops on grades.

The springs are large and easy in action, making the car most comfortable to ride in. Full elliptics are used in the rear and semi-elliptics in front, all having five leaves.

An improvement in the wiring arrangement consists of a support for the wires leading from the dash to the spark plugs. The wires are not required to carry their own weight, and, further, the connections with spark plugs are through short rubber-covered chains. Each plug is provided with a spark gap. The four coils and the commutator are placed on the dash, and the commutator has a glass front so that its operation may be observed.

The cooling water is circulated through a combined tank and radiator by a gear-driven rotary pump located in the engine crankcase. The pump is driven from the

camshaft. A belt-driven fan draws air through the radiator, which is built of tubes with radiating gills.

The muffler is of liberal size and is placed well to the rear and connected with the exhaust valves by 1 1-2 inch tubing. It is exceedingly efficient, as has already been said; but if the extreme power of the motor is required, it may be cut out by a valve operated by a boot button.

The rated horsepower of the motor is developed at 1,300 revolutions per minute; but a much higher relative speed may be attained, when the governor is cut out.

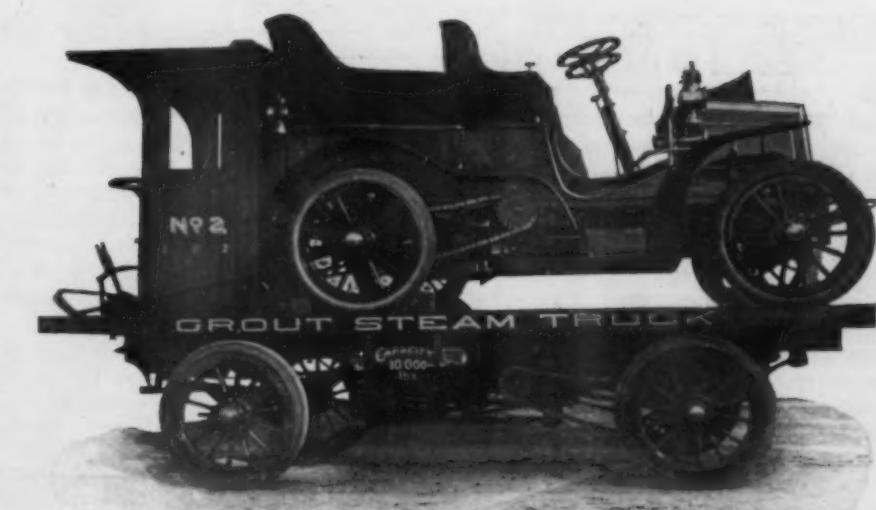
The tonneau is of a very handsome King of the Belgians design, made of laminated wood, with a capacity for three passengers. It may be removed entirely when it is desired to carry only two on the front seat or for racing purposes. The car is painted a fine dark-blue and striped in gold. The price is \$2,000.

Grout Steam Truck.

A most unusual sight, that of one automobile carrying another bodily, is shown in the accompanying engraving. The upper machine is one of the touring cars manufactured by the Grout Brothers, of Orange, Mass. The lower one is a powerful steam truck, which was designed and built by the company for its own use in delivering pleasure cars to its customers or to railroad stations for shipment.

The truck has a carrying capacity of five tons and can handle a touring car weighing over a ton almost as easily as it could a light baby carriage. The power equipment of the vehicle is a 20-horsepower reversible engine and a 24-inch steam-generator. The fuel used is kerosene. Sufficient water capacity is provided for a 50-mile run and fuel capacity for one of from 75 to 100 miles.

Although this is the only machine of this description that has so far been manu-



GROUT METHOD OF HAULING NEW STEAM CARS TO STATION FOR SHIPMENT.

factured by the company, its operation has been so satisfactory in every respect that doubtless more will be forthcoming.

Howard Six-Seated Tonneau.

The accompanying engraving shows the new Howard six-seated aluminum body with canopy top fitted to the 1904 Howard chassis. The body is distinguished by the middle seats which are entered from behind through a fourteen-inch passage. The seats have curved backs conforming in shape to the King of the Belgians curves of the rear seats. The body widens toward the rear, so that the passengers in the back seats can see the road ahead past the other occupants.

The chassis on which this huge body is mounted has a very long wheelbase and the frame is of pressed steel. The engine has four cylinders, 4 1-2 by 5 inches, and mechanically-operated inlet valves. There

are three speeds forward and reverse, with bevel gear drive to differential on rear axle. The artillery wheels are 34 by 4 inches. Steering knuckles are Lemoine pattern. Both brake levers automatically disengage the clutch.

A special feature of the equipment is that the front lamps are connected to the steering knuckles, so that they are turned in the same direction as the wheels when rounding a turn.

On the dash are a sight-feed oiler and a gauge to show how fast water is being pumped through the engine. The car has a honeycomb radiator, and a large gasoline tank is provided under the front seat. Storage batteries are used in connection with jump spark ignition, the batteries being carried in a large box on the side. A corresponding box carried on the opposite side provides ample room for tools.

This car is denominated the Tonneau de Luxe by the builders, the Howard Automobile Co., of Yonkers, N. Y.

AUTOS FOR TELEPHONE INSPECTION.

Special Correspondence.

NASHVILLE, April 23.—Automobiles for telephone line and exchange inspection trips may be used extensively in the near future by the Cumberland Telegraph and Telephone Company, as a result of experimental trips made recently in this State. The company operates a system of lines that covers Ohio, Indiana, Illinois, Kentucky, Tennessee, Mississippi and Louisiana, and has its main offices in this city.

Recently President Caldwell, Manager Hume and Purchasing Agent Symmes spent several days testing the practicability of a Rambler touring car for inspecting lines and exchanges. One day they made a trip from Nashville, through Gallatin, Carthage, Hartsville, Watertown and back to Nashville, a total distance of about 130 miles, and inspected all the exchanges in the towns visited.



HOWARD SIX-PASSENGER TONNEAU DE LUXE MODEL FITTED WITH CANOPY TOP.

ST. LOUIS RUN ROUTE WEST FROM TOLEDO.

Detail Map and Guide Show Course Through Most Attractive Parts of Ohio, Indiana and Illinois and Avoiding Sandy and Heavy Clay Portions.

Special Correspondence.

CHICAGO, April 25.—Extensive arrangements are being made for the western section of the World's Fair tour, which is scheduled to begin in New York on August 2. Under the auspices of the Chicago Automobile Club and the American Automobile Association, a detail road map and descriptive guide of the portion of the run west of Toledo is being prepared by F. E. Wheeler, publisher of the *Motor Guide*, with offices in the Monadnock building, Chicago.

A route west of South Bend, Ind., has been selected which will afford the best roads, and in addition to the roads chosen as the official route, which is marked on the map in red, auxiliary roads in a ten-mile strip on either side of the principal route are shown.

Especial care has been taken to give tourists the benefit of the beautiful scenery which abounds in many parts of Ohio, Indiana and Illinois, and to avoid the sandy districts which are frequently encountered in northern Indiana and in parts of Illinois. The wisdom of this action will be apparent to any one who has undertaken an overland journey through the lake shore country of northern Ohio and Indiana, or the gumbo regions of central Illinois.

ROUTE CHOSEN FROM TOLEDO.

The route selected follows closely the Lake Shore and Michigan Southern railway from Toledo, Ohio, by way of South Bend, Ind., to Chicago. From Chicago the way leads down the west side of the drainage canal through Joliet to Morris, Ill., where it leaves the Illinois River and leads south through the corn belt of Illinois, following in a general way the Chicago and Alton railway, through Dwight, Pontiac, Bloomington and Lincoln to Springfield, Ill., which is the last over-night station en route to St. Louis.

Nearing the end of the tour the country becomes more broken and wooded, affording a contrast to the prairies of Illinois, and finally leads through that portion of the Mississippi Valley known as the Great American Bottoms, into East St. Louis, crossing the Father of Waters at Market Street.

Garage and hotel accommodations at each night stop on the route have been carefully arranged for, and though the resources of the country will be severely taxed in many instances, owing to the great number who are preparing to join in this St. Louis run, the hospitality of the people of the middle west is sustaining its

traditional fame and no detail of the arrangement seems to have been omitted.

MIDDLE WEST ROAD MAPS.

The good roads movement in the middle west is having a revival of interest as the season advances. Mr. Wheeler has a force engaged in surveying, platting and collecting data which will enable him to compile detail road maps of a large portion of Wisconsin, Illinois, Indiana and Michigan, as well as the main route from east to west. These maps are designed to show all the roads, as well as their condition, and the character of the country topographically, with such landmarks as churches, country school houses, cemeteries, etc. When finished they will be the most complete and elaborate of their kind ever attempted.

The work is under the supervision of the Good Roads Committee of the Chicago Automobile Club, of which Secretary Sidney S. Gorham is chairman.

WANT FAIR ROUTE CHANGED.

Motorists Urging Advantages of Cleveland, Columbus, Indianapolis Course.

Special Correspondence.

COLUMBUS, O., April 23.—The local Board of Trade may be asked by automobileists here next week to exert its influence toward inducing the St. Louis run committee of the American Automobile Association to officially change the World's Fair tour route of the New England and northern New York State and Ohio con-

tingents so as to bring them down from Cleveland to this city and on through to Dayton, Richmond, Indianapolis and Terre Haute instead of over the previously planned route through Toledo, Chicago and Springfield.

The proposal to change the route has been taken up with the A. A. A. National Committee, eastern motorists who know something of the character of the northern roads having joined the western enthusiasts in urging the advantages of the southern course.

Interest in the proposed run continues to grow, and there is no longer any doubt that the event will be a big success. William Monypeny, of this city, who is a member of the national committee in charge of the run from this city to St. Louis, is daily in receipt of letters of inquiry concerning the arrangements, and has received many assurances from Ohio automobileists that they will be on hand to join the party here. Mr. Monypeny also is in receipt of numerous letters from the East, giving information of parties being formed in various sections of New York, Pennsylvania and other States, to join the big run.

By the end of next week Mr. Monypeny expects to have completed his subcommittee for the run from here on. When this committee is completed it will have a representative in every city where stops will be made between Columbus and St. Louis, and it will be the duty of the individual members to make and perfect arrangements for entertaining the tourists in their respective towns.



A PARTY OF MARTINSBURG MOTORISTS ON A RUN TO WINCHESTER, VA.

The photograph reproduced above is one evidence that automobiles are becoming popular even with residents of small towns in the South. It shows a party of automobileists on a run from Martinsburg, W. Va., to Winchester, Va., in three runabouts, all of which are owned in Martinsburg. Note early spring road and weather conditions.

CARS FOR PORTO RICO.

Fitted with Wagonette Bodies and Cape Cart Hoods.

The special cars for use in an automobile passenger transfer service on the island of Porto Rico have just been completed by the Knox Automobile Company and will be taken to the island this week by C. H. Martin, formerly connected with the company but now engaged independently in managing the auto stage line. Convinced of the practicability of such a service with the air-cooled cars by several months' experience with one in Porto Rico, Mr. Martin returned recently for more. These are of the regular 8-horsepower, single-cylinder model, but are fitted with special wagonette bodies seating six passengers in the rear portion and two on the front seat beside the driver. A big Cape Cart hood protects all occupants from the sun's rays in dry weather, and when it rains side and rear curtains can be let down to enclose all seats. On cool pleasant evenings the top can be folded back entirely out of the way.

The folding front, used in the regular models for an auxiliary seat, is in these cars arranged for the carrying of trunks and valises, and for storing extra clothing and miscellaneous articles.

Turner solid rubber tires are fitted to the wheels and the driving gear has been raised to 42-tooth size, reducing the speed to seventeen miles an hour, but gaining tractive effort for the many steep grades. An extra powerful set of brakes was also put on. A complete outfit for replacements and repairs will accompany the three cars to the island.

The service to be maintained will connect the two termini of a railroad twenty-six miles apart, at Camuy and Aguadilla. The other termini are respectively at San Juan and Ponce. The auto coaches will make two round trips a day, one of the three being held in reserve.

ROSS'S STEAM RACER BURNS.

Stanley Car Used at Ormond Beach and Commonwealth Hill Damaged.

Special Correspondence.

BOSTON, April 25.—Louis S. Ross, the Newton man who has figured in many important automobile contests within the last year or two with a Stanley steam racing car, will have to rebuild his car before it can figure in any more races. He was out on the road with it, in Newton, this afternoon, when the machine developed a gasoline leak, and before Mr. Ross was aware of any danger a great mass of flame was shooting up behind his back.

People on the street saw the unusual spectacle, however, and shouted to him, fearing that he was in imminent danger of being blown up or badly burned. One of them sounded an alarm from a nearby fire box, and in a few minutes the Newton

fire department had a detachment on the scene with a fire engine.

Meanwhile, Mr. Ross had stopped his car and soon succeeded in shutting off the gasoline and quenching the fire. He sustained only slight burns, but the body of his car was badly damaged. He says he will have the body rebuilt at once.

The machine is the same one he had at Ormond Beach and also at the Boston hill-climb.

BALTIMORE FIRE HEROES.

Women in Autos Rescue Valuable Papers —No Agencies Burned.

Special Correspondence.

BALTIMORE, April 25.—It seems most remarkable and fortunate that in the vast area of 140 acres in the business center of this city that was swept clean by the great fire early last February, not an automobile nor an automobile establishment was burned. Articles of almost every other conceivable sort, from a pin to a modern

drove alone the fifteen miles to the city at a speed that she afterwards described as "simply flying." She found her way through the crowded streets to her father's office, carried out all his books and papers and succeeded in getting safely away five minutes before the building was a raging furnace.

Another young woman whose husband, the secretary of a title and trust company, was very ill, remembered that he had told her of some important deeds which he had left in his desk in one of the large office buildings. They represented large property and were the hinges of a case on which he had staked his business reputation. To telephone was impossible; the cars were not running, and to walk the long distance to the city would require several hours. Then they thought of the automobile. Leaving some one in care of the sick man, the wife went to the stable, got into the machine, ran it to the city and found her way to the office building. She climbed the long stairs and with her husband's key



C. M. SCHWAB AND PARTY FROM NEW YORK INSPECTING DETROIT FACTORY, PERSONALLY CONDUCTED BY H. B. JOY.

fireproof (?) skyscraper was destroyed. In all, 2,500 buildings were swept out of existence in the thirty hours that the flames raged, and a grand total of \$50,000,000 loss was caused. It is estimated that 15,000 commercial, financial and professional institutions were rendered homeless, but among them all there was not an automobile agency.

The explanation of this apparent phenomenon lies in the fact that all of Baltimore's automobile establishments are located in the upper part of town, which was never in danger throughout the entire thirty hours, newspaper reports to the contrary notwithstanding.

In all the accounts of the great calamity no mention was made of the part played by the automobile, yet more than one man here owes more than he can repay in a long time to the machine which he was fortunate enough to possess.

A young woman of the higher circle, whose father was in another city, heard of the fire at her home in the country, and taking out his automobile, which she had never before been permitted to run, she

opened the door of his office and found the papers. Then she coolly walked down the steps and rode away. Twenty minutes later the building was dynamited.

SCHWAB PRAISES AMERICAN CARS.

Charles M. Schwab is reported to have said that he considers American automobiles equal to anything of the kind built anywhere. Mr. Schwab and a party of friends journeyed from New York to Detroit to inspect the new plant of the Packard Motor Car Co., as guests of Joseph Boyer, president of the Chicago Pneumatic Tool Company and a director of the Packard company, and the opinion was expressed in the Detroit Club after the inspection. A new plant is under consideration for the Pneumatic Tool Co., and the object of the visit to the Packard works was to secure information that might be of value in planning the new factory. Henry B. Joy, general manager of the Packard concern, "personally conducted" the party over some of the fine roads of Detroit, a Model L and a Model K Packard car being used for the transportation of the guests.

In the photograph the Model L machine is shown on the left. Mr. Joy is at the wheel, with Charles M. Schwab beside him. The rear seats are occupied by J. C. Niver, London, Eng., J. A. Schwab and John R. McGinley. The Model K car, on the right, is driven by Charles Schmidt, and next to him sits John W. Duntley, an official of the Chicago Pneumatic Tool Company. Joseph Boyer, W. S. Miller and J. H. Ward are in the tonneau.

EXHIBIT AT THE FAIR.

Shape in Which It Will Be Found When Exposition Opens Saturday.

The formal opening of the St. Louis Exposition on Saturday, April 30, will find the American exhibit of automobiles fairly in order, though it will not be possible to have all the cars in place until some days later. All decorating, lighting, flooring and other work on the section reserved for this exhibit has been completed by the National Association of Automobile Manufacturers, which had this matter in hand, and the exhibits, as they arrive, have but to be run into the places assigned to them. Even this is simplified by the fact that two railroad sidings run right into the Transportation Building, where the exhibit is placed, and pass close to the automobile space. All the cars that will be exhibited in the American section have been shipped, but owing to the slowness of transportation and the distances to be covered it will be some time before all reach St. Louis. The French section, which is in the same building, on the opposite side from the American section, is said to be in a very backward condition, very little work having been done on the stands and but few cars shipped.

A DUAL LAUNCHING.

The fast developing interest in power boating for pleasure and auto boat racing is given recognition by the launching of two new craft on the sea of class journal publication during the present month. One of these—the *Motor Boat*—is a bi-weekly “devoted to all types of power craft” and published at 1133 Broadway, New York, by the Motor Boat Publishing Co. The first issue appeared April 10. It contains forty pages of interestingly written and well-illustrated matter pertaining to its subject, printed on a fine quality of heavy super-calendered paper. The other is a weekly devoted to the two allied new pastimes as its name *Motoring and Boating* implies. It began its amphibious existence April 6, under the editorship of James P. Holland, formerly of *Automobile Topics*, at 125 West 37th Street, New York. The first numbers of this are also forty-page papers, sufficiently illustrated with engravings from photographs and drawings, and the text contents is spicy and abreast of the times in both fields.

Locomobile Garage in N. Y.

A very commodious and completely equipped garage is that of the Locomobile Company of America, at Broadway and 76th Street, New York, where not only the cars made by that company, but automobiles of all makes are cared for. The entire five floors and basement of the building which measures 100 by 80 feet, are devoted to the various branches of work which a modern garage is called upon to handle. The heavier cars are stored on the main floor, and the offices of the superintendent and foreman are at the street corner. The second floor is divided, a portion being used as a stockroom, where parts and sundries are kept, and the remainder as a salesroom for Locomobile cars. The third floor is the “dead storage” room, where unused cars are kept. Many owners of automobiles like to make their own repairs and tinker about their machines, and on this floor they may do so to their hearts’ content. An amateur is building an automobile in this room, and already has a substantial looking running gear set up. A machine shop and toolroom occupy the entire fourth floor, while the fifth is devoted to carpenter and body work, painting and upholstering. The basement is used chiefly for repairing and overhauling steamers, and is fireproof.

In the basement is stored a curious looking affair which, at first sight, looks like a fire engine boiler on two wheels attached to the rear of a steam runabout. This proves to be a disinfecting apparatus. The copper “boiler” is the generator of a disinfecting gas, which is forced by a fan through piping into the building to be

disinfected. In order that the apparatus may be readily transported, it is mounted on two rubber-tired wheels and attached by a swivelling joint to the rear of the runabout. The automobile not only tows the disinfecter to its work, but furnishes steam for the engine that runs the fan. This is certainly a novelty in the way of an “automobile train,” though it can hardly be called beautiful.

There are 137 cars stored at the Locomobile garage, subject to close checking at all times, and an owner may have a weekly report of the movements of his machine if he so desires. An excellent rule is that no dealings whatever are had with chauffeurs, all business being done with owners direct.

The first gasoline car sold by the Locomobile Company has just received an overhauling in the shop, and with the addition of the latest form of hood, looks like a brand new machine. The owner states that the car has given him such satisfaction that he prefers to retain it and have the latest improvements added, rather than part with a tried and proven machine by purchasing a new one.

RUN COST AND SHOW PROFITS.

The net cost of the New York-Cleveland-Pittsburg endurance run of last October to the N. A. A. M. was \$4,045.64, as shown by the report of the treasurer for the year 1903. The profits from the Chicago automobile show exceeded the net returns from the Madison Square Garden exhibition by \$3,365.80, the net returns from the Coliseum being \$14,545.54 as against \$11,179.74 from the New York show. On January 1 the association had on hand funds amounting to \$5,268.54.



DR. MILBANK JOHNSON, PRESIDENT OF THE A. C. OF SOUTHERN CALIFORNIA.

The above engraving shows the president of the Automobile Club of Southern California, Dr. Milbank Johnson (in rear seat with cap on), in his Winton touring car after an eight-hour run in February from Los Angeles to Santa Barbara, by way of Casitas Pass and New Grade.

SUPREME COURT TEST FOR DETROIT LAW.

Decision in Schneider Case Holding Licensing Ordinance Valid to be Referred to Highest Court—Ford and Dodge Brothers File Injunction Suit in the Circuit Court.

Special Correspondence.

DETROIT, April 23.—The fight against automobile licenses and number tags which has disturbed Chicago, is now on in full force in this city. The owners of automobiles received a severe setback this week, but they are marshaling their forces for renewed attacks.

On Thursday Judge James Phelan, in the Recorder's Court, sustained the validity of the city ordinance requiring owners of automobiles to purchase licenses and carry aluminum numbers on their cars. This decision was rendered in the test case instituted by John P. Schneider, who drove his machine about the streets unlicensed and untagged and asked Patrolman Fitch to make complaint against him. Judge Phelan found him guilty of violating the ordinance and fined him \$25. Mr. Schneider appealed the case to the Supreme Court at once in a further effort to prove the unconstitutionality of the law.

Meanwhile suit has been brought by Henry Ford and John F. and Horace E. Dodge in the Circuit Court for an injunction to prevent the police department from enforcing the ordinance, and asking also that the ordinance be declared unconstitutional and void. This is also a test case and will be given a hearing before Judge Henry A. Mandell next week.

There is great hope among local automobileists that the Supreme Court will reverse Judge Phelan's decision in the Schneider case, as was done in Chicago, on the ground that the ordinance interferes with the personal liberty of owners.

OPINION IN SCHNEIDER CASE.

"The defendant admits not complying with the ordinance and insists that the Common Council of the City of Detroit has no power to adopt any ordinance requiring a compliance with said ordinance. Respondent further contends that the enforcement of this ordinance would deprive him of his property without due process of law and in this respect is a violation of his personal rights and is therefore void.

"Defendant's counsel contends that in view of the many automobile manufacturing institutions recently located in this city, a more liberal ordinance than the one at bar should succeed the one under discussion; otherwise it will have a tendency to lessen the sales of such vehicles and impair the success of the aforesaid industry. Counsel does not urge this point and I believe rightly so; for no law which has for its object the protection of life and limb should yield to any such circumstance.

"I am not unmindful of the fact that

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the Court of Appeals of a sister State has held an ordinance, similar in some respects to the one before this court, to be unreasonable. But the question here is, has the Common Council, acting under the power conferred upon it by the city charter, the right to pass such an ordinance? Section 50 of Chapter 7 of the city charter reads: 'The Common Council shall have power to license and regulate . . . draymen, carmen, truckmen, drivers of cabs, hackney coaches, omnibuses, carriages, sleighs, express vehicles, and vehicles of every other description used and employed for hire and to fix and regulate the amount of rates and compensation.'

"It is not contended on the part of the people that this ordinance is passed for the purpose of deriving revenue from the licensing of automobiles, but it is to identify those who may be guilty of violating this ordinance, either in relation to speed or the further purpose of bringing to justice those who may negligently run down, kill or injure any pedestrian or vehicle passenger. I do not believe that the said ordinance deprives any owner or operator of an automobile of any right he may have under the State or Federal constitutions.

"I cannot, therefore, hold that this ordinance, having in view the beneficial object it has, is unreasonable or beyond the legislative power of the City of Detroit, and I believe that it is my duty to sustain it under the reasonings of the Supreme Court of this State and more particularly by the case of the City of Detroit *vs.* The Detroit United Railway Co., not yet reported but known as 'the air brake case.'

"I, therefore, find the respondent guilty of having violated the said ordinance and order him to pay a fine of \$25 to the City of Detroit."

ALLEGATIONS IN FORD SUIT.

Automobilists hope that while the Supreme Court has the Judge Phelan decision under advisement, something may come of the suit brought against the city in the Circuit Court by Henry Ford, *et al.* This test suit has the same general object as the Schneider case, only another method is being employed. The complainants state definitely that the suit is brought in behalf of other automobile owners and operators in Detroit and for the purpose of preventing a multiplicity of suits.

The ordinance occasioning all the fuss was passed by the Common Council on October 27, 1903, and it is alleged by Mr. Ford and the Dodge Brothers in their complaint that "it is an unjust discrimination against automobile owners and operators; its provisions requiring owners or drivers to procure a license and attach to their vehicles aluminum figures, for which they are compelled to pay \$1 for every automobile registered, is double taxation of personal property; the ordinance is class legislation and unjustly discriminates between owners and drivers of automobiles

and owners and users of other vehicles, in that the latter are not required to attach tags or take out licenses and are not deprived of the right of allowing children under 16 years of age from operating the vehicles."

The complainants also claim that because of the licenses, which must again be recorded after every re-sale, they are compelled to give away to the public details of their business which they wish to retain as private. In closing, they assert that no complaint is registered against those parts of the ordinance providing for the placing of lights on automobiles, or governing the rate of speed on the city streets.

EXEMPT FROM REGISTRATION.

Testing Experimental Car Does Not Constitute "Private Use" in Connecticut.

Special Correspondence.

NEW HAVEN, April 23.—That the use of an automobile by the manufacturer or his employe for the purpose of testing a new production on the public highways does not constitute "private use" within the meaning of the Connecticut automobile licensing law, was the decision of Judge Dow, a New Haven police court magistrate, last week. His opinion was rendered in the case of James H. Jones, mechanical engineer of the Corbin Motor Vehicle Company, of New Britain, who was arrested in this city last Tuesday and summoned to the police court on Wednesday to explain why his car did not have a license number. He was defended by Attorney J. H. Kirkham, of New Britain; and P. P. Wilcox, of the Corbin company, was also present to watch the proceedings.

It was maintained by Assistant City Attorney Hall, of this city, that the car should carry a tag bearing the number of a State license and the initial of the State. In defense the attorney for the defendant cited Section 7 of the law, which provides that "such automobiles or motor vehicles as are owned by manufacturers of, or dealers in, such vehicles, and are not employed in the private business or for the private use of such manufacturers or dealers," shall be exempt from the provisions of the law requiring every owner of an automobile to obtain from the Secretary of State a license certificate for each motor car and to have the number of the certificate and the initial letter of the State name displayed "on the back of the machine in a conspicuous place and manner, the numbers and letter to be at least three inches high."

The evidence submitted showed that the company was perfecting a high-powered, air-cooled car and that it was necessary to put it through a thorough test on the roads to develop all the conditions that would be met in actual service in the hands of purchasers. It was also shown that in addition to testing and demonstrating the car,

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it was being driven to New Haven to be fitted with a body.

Counsel for the State claimed that any use on the public highway of vehicles by a manufacturer constitutes private use within the meaning of the law.

Judge Dow held that while the language of the law was somewhat ambiguous, the use that was being made of the machine was not private and the defendant was discharged.

A driver employed for the Stevens-Duryea automobile was recently arrested upon a similar charge and was fined in the same court, but the court differentiated between the two cases and did not base his decision on the former case as a precedent.

BUFFALO VEHICLE TAX.

Aldermen Plan Annual Assessment of \$5 and \$7.50 Against Autos.

Special Correspondence.

BUFFALO, April 25.—It is the apparent intention of the common council of this city to enact an ordinance imposing a tax upon every vehicle of whatever character that is used on the public streets. The aldermanic committee on ordinances informally considered this subject last week. Automobilists, motor cyclists and bicyclists will come under the category, and they are becoming aroused to their danger. It is safe to predict that if the committee ever gives the matter a public hearing there will be plenty of opposition, especially if the present plan to place the heaviest tax on automobiles threatens to be adopted.

Under the present plan it is proposed to tax the smaller automobiles \$5 each annually and the larger machines, such as touring cars, delivery wagons and the like, \$7.50 a year. Motor cycles and bicycles will probably be taxed 50 cents each a year. A vehicle tax is reported to be in successful operation in Milwaukee, and it is highly probable that some of the provisions of the ordinances of that city will be incorporated in the new Buffalo law, with such changes as will make them applicable to local situations. The city charter was recently amended so as to give the council the right to impose such a vehicle tax.

AT A recent election in the town of Menasha, Wis., resolutions were adopted limiting the speed of automobiles to twelve miles an hour upon any public highway and to four miles an hour while passing any road crossing.

AN ORDINANCE has been introduced in the Chattanooga city council reducing the speed of automobiles within the city limits from a maximum of twelve to ten miles an hour.

SIX MILES an hour is the maximum speed permitted within the city limits of Omaha by an ordinance now pending in the council.

RHODE ISLAND'S NEW LAW.

Text of Act Now Operative Without Signature of Governor.

AN ACT

To Provide for Registering Automobiles, Motor Cars, and Motor Cycles, and for Licensing Operators Thereof.

It is enacted by the General Assembly as follows:

SECTION 1.—All automobiles, motor cars and motor cycles shall be registered by the owner or person in control thereof in accordance with the provisions of this act. Application for such registration may be made, by mail or otherwise, to the Secretary of State, upon blanks prepared under his authority. The application shall contain a statement of the name, place of residence, and address of the applicant, with a brief description of the automobile, motor car, or motor cycle, including the name of the maker, the number, if any, affixed by the maker, the character of the motor power and the amount of such motor power stated in figures of horsepower; and with such application shall be deposited a registration fee of two dollars. Said Secretary of State shall then register, in a book to be kept for the purpose, the automobile, motor car, or motor cycle described in the application, giving to such automobile, motor car, or motor cycle a distinguishing number or other mark, and shall thereupon issue to the applicant a certificate of registration. Said certificate shall contain the name, place of residence, and address of the applicant, and the registered number or mark; shall prescribe the manner in which said registered number or mark shall be inscribed or displayed upon the automobile, motor car, or motor cycle. A proper record of all applications and of all certificates issued shall be kept by the said Secretary of State at his office, and shall be kept open to the inspection of any person during reasonable business hours. The certificate of registration shall always be carried in some easily accessible place in the automobile, motor car, or motor cycle described therein. Upon the sale of any automobile, motor car, or motor cycle its registration shall expire, and the vendor shall immediately return the certificate of registration to said Secretary of State, with notice of the sale, and of the name, place of residence, and address of the vendee.

SECTION 2.—Every manufacturer or dealer in automobiles, motor cars, or motor cycles may, instead of registering each automobile, motor car, or motor cycle owned or controlled by him, make application, upon a blank provided by said Secretary of State, for a general distinguishing number or mark, and said Secretary of State shall, if the facts stated in said application are true, grant said application and issue to the applicant a certificate of registration containing the name, place of residence, and address of the applicant, and the general distinguishing number or mark assigned to him, and made in such form and containing such further provisions as said Secretary of State may determine; and all automobiles, motor cars, and motor cycles owned or controlled by such manufacturer or dealer shall, until sold or let for hire or loaned for a period of more than five successive days, be regarded as registered under such general distinguishing number or mark. The fee for every such license shall be ten dollars.

SECTION 3.—Except as otherwise provided herein, no automobile, motor car, or motor cycle shall, after the first day of June, 1904, be operated upon any public

highway or private way unless registered as above provided, and the registered number or mark of every automobile, motor car, and motor cycle operated as aforesaid shall at all times plainly be displayed thereon in Arabic numerals not less than three inches long, and conforming in this and other details to the requirements prescribed by said Secretary of State in his certificate of registration.

SECTION 4.—Every person having control or charge of an automobile, motor car, or motor cycle shall, whenever upon any public street or way and approaching any vehicle drawn by a horse or horses, or approaching any horse upon which any person is riding, operate, manage, and control such automobile, motor car, or motor cycle in such manner as to exercise every reasonable precaution to prevent frightening of such horse or horses and to insure the safety and protection of any person riding or driving the same. And if such horse or horses appear to be frightened, the person in control of such automobile, motor car, or motor cycle shall reduce its speed, and shall not proceed farther toward such animal unless such movement be necessary to avoid accident or injury, or until such animal appears to be under the control of its rider or driver, and in case of extreme fright shall reduce the motive power to a full stop.

SECTION 5.—Every automobile, motor car, or motor cycle operated in this State shall be provided with an adequate brake, with a muffler, and with a suitable bell, horn, or other means of signalling, and shall, during the period from one hour after sunset and one hour before sunrise, display such lights, as shall be approved by said board(?). Automobiles, motor cars, or motor cycles owned by non-residents of this State and driven by a person residing and registered in some other State may be operated on the roads and highways of this State.

SECTION 6.—Every automobile, motor car, or motor cycle shall be provided with a lock, key or other device to prevent said vehicle from being set in motion, and no person shall allow any such vehicle operated by him to stand or remain unattended in any street, avenue, road, alley, highway, park, parkway, or other public place without first locking or making fast the vehicle as above provided.

SECTION 7.—The terms "automobile," "motor car," and "motor cycle" as used in this act shall include all vehicles propelled by power other than muscular power, excepting railroad and railway cars and motor vehicles running only upon rails or tracks, and steam road rollers.

SECTION 8.—All money collected for registration and license fees and fines under the provisions of this act shall go to the support of public roads in this State under the direction of the State board of public roads. And no fees shall be allowed or retained by said Secretary of State out of any money received by him under this act.

SECTION 9.—Town councils of the several towns may exclude automobiles, motor cars and motor cycles from certain roads in their respective towns and shall designate such roads by public signs; provided that such roads excluded shall not include State roads or main highways leading from town to town.

SECTION 10.—Any person convicted of violating any of the provisions of this act shall be punished by a fine not to exceed \$20 or by imprisonment not exceeding three months.

SECTION 11.—This act shall take effect from and after its passage.

Patents

Envelope for Storage Battery Plates

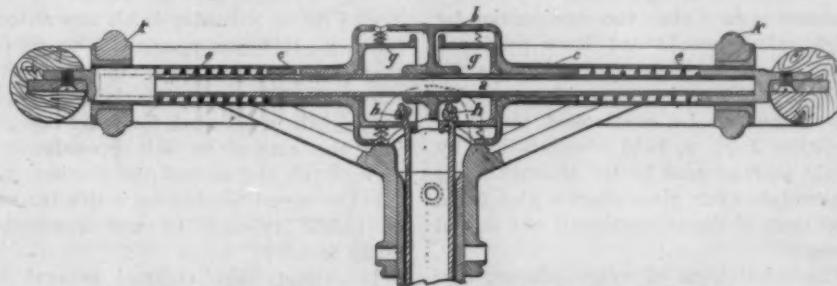
No. 756,176.—A. Meygret, of Paris,
France.

An acid-resisting, elastic coating formed by dipping the plate or grid, after the active material has been applied thereto, in a bath or solution consisting of castor-oil, essence of turpentine, octonitric cellulose, and ordinary nitrate of cellulose of commerce, the tetra nitrate of cellulose being preferred. The solution hardens in a tough skin on the surface of the plate. To permit the acid in the cell to get at the plate, it is proposed to perforate or slit the skin mechanically.

Spark and Throttle Regulator.

No. 757,815.—A. Krebs, of Paris, France.

The new Panhard speed control device in the steering wheel, illustrated in these pages last November 28, p. 567. It takes the place of two spokes of the wheel, and consists essentially of a diametrical fixed shaft, on each end of which is a sleeve which may be rotated to vary the spark or the throttle opening. On the shaft *a*, which is tubular, is fixed rigidly a barrel or cap *b* with toothed ends which match other teeth in the enlarged ends of the loose sleeves *c c*. Springs *e* normally



KREBS STEERING WHEEL SPARK AND THROTTLE CONTROL

force these teeth together, but by gripping the sleeves or the knurled collars *k* attached thereto, the sleeves may be drawn free and turned. Secured to the sleeves are drums *g*, on which wind cords *h h*, passing down through the steering column and connected to the spark and throttle. Turning the wheel simply twists the cords a little without pulling them up or down.

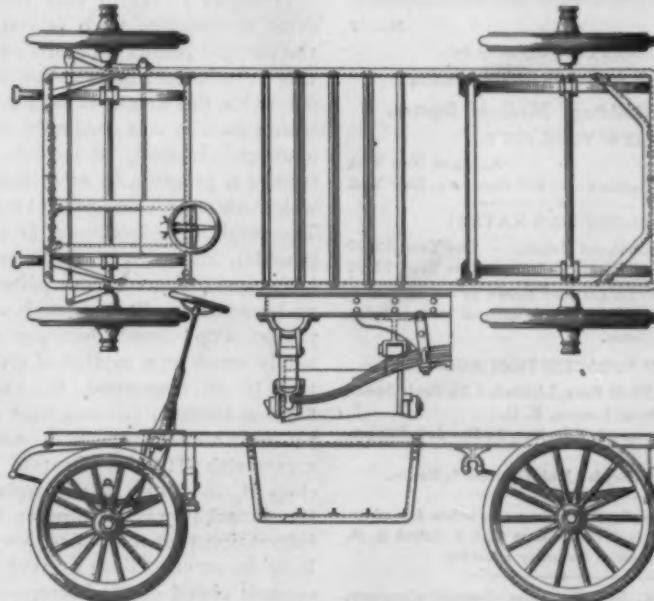
Electric Wagon Running Gear.

No. 757,941.—H. P. Maxim, of Pittsburgh, Pa.

A running gear designed to be sold to wagon builders, ready to equip with power outfit and body. It is built up mainly of angle and channel sections as shown, and has an underslung rack, formed of angle steel partitioned with T-sections, for the battery. The side members are bent up separately and joined at front and back, the ends forming the two halves of the front and rear cross members. The rear

end is stiffened by a channel bar bent as shown. The bottom flanges of the two channel bars forming a base for the attachment of the seat for the transverse spring.

ing, the distance rod 7 relieves the springs of the twisting force—due to braking, but not of the drag due to the inertia of the running gear and body, which is sustained

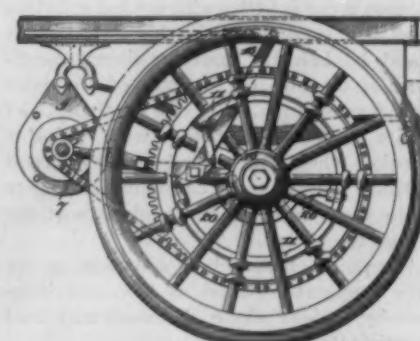


MAXIM FRAME AND RUNNING GEAR FOR ELECTRIC VEHICLES

The front spring hangers are formed to serve as corner stiffeners as well. The rear wheels are designed to be separately driven by sprocket wheels and chains from either one or two motors.

by the forward half of the side springs in tension.

AN ATTACHMENT on a score of automobiles owned by the Mobile Company of America, which was made in Buffalo on February 29 upon a writ secured by Gibson Howard to secure payment of a judgment, if one were granted in a suit begun by Howard, has been ordered vacated by Justice Childs in the Supreme Court of New York. The suit was brought to recover damages to a building at 69 and 71 Cary Street, formerly occupied by the Mobile Company and which was burned in 1901, as a result, Howard alleges, of negligence on the part of the company and in violation of its agreement to abide by the rules of the Fire Underwriters' Association as to the storage



MAXIM EXPANDING WHEEL BRAKE

and handling of gasoline. The attachment was vacated upon affidavits of John Brisben Walker, alleging defects in the service of papers.

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FRANCE—Boyeau & Chevillet, 22 Rue de la Banque,
Paris.

GERMANY—A. Seydel, Mohrenstrasse 9, Berlin.

To Advertisers—Copy or changes in orders for advertisements should reach us not later than 5 o'clock p. m. Monday for the issue of Saturday following.

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A. A. A. A protest against the **Racing** method of classification of **Classification**. cars at the recent Boston hill-climbing contest has been entered by a New England builder and is published elsewhere in this issue. It recalls attention sharply to the whole subject of racing classification as adopted by the American Automobile Association and which has been extensively discussed in recent issues of this paper. From an automobile builder's point of view the expression of disapproval of the Phelps Motor-Vehicle Co. is quite proper, though we would not be prepared to go the length of saying that because a car is fitted with a wind splitting hood and is capable of a high velocity it would be helpless under ordinary conditions of travel. In the case of Mercedes cars, for example, it is one of their chief merits that when fitted with suitable sprocket wheels, they can be used for road or track racing or for carrying passengers in the most crowded thoroughfares at the will of the owner.

The point of the whole question, as we have frequently stated, is that classification by weight alone is insufficient and unsatisfactory.

A strict adherence to such a classification will invariably produce results similar to those at the Boston hill climb. As matters now stand, the only way to avoid really ridiculous results is to take advantage of the clause in the racing rules which permits the organizers of races to make

special subdivisions in each class (the weight limitations being strictly adhered to) with the consent and approval of the A. A. A. Racing Board.

It seems therefore that the Massachusetts Automobile Club is responsible for the farcical results on April 19 in not getting permission from the Racing Board to subdivide the weight classes into groups—racing cars in one, ordinary road cars in another. Instead, the club apparently framed a program in accordance with the weight classification and "let it go at that." The result was, in class A (1,433 to 2,205 pounds), for example, that one finds a 60-horsepower Mercedes car pitted against a 15-horsepower Phelps and a 24-horsepower Pope-Toledo among others. It surely must be a matter of great satisfaction to all concerned to know that a \$15,000 German car can beat a \$2,500 or \$3,000 American car in a race up Commonwealth Hill in Boston. Again, in class B, (881 to 1,433 pounds) one finds the remarkably interesting and instructive information that a 40-horsepower Richard-Brasier car can climb a given hill several seconds ahead of a 7-horsepower Stevens-Duryea. The owners of the latter entry must have realized before the start of their car that they had not a ghost of a chance of winning—truly a splendid incentive for good sport.

Examining the results of the contest of April 19 it will be seen, however, that even had cars been grouped into racers and roadsters in each class the classification by weight alone would not have produced close contests in all cases, so wide was the variation of power in proportion to weight.

It is not to be overlooked that any deviation from a bald classification by weight such as used by the Massachusetts Automobile Club gives chance also for a good deal of dissatisfaction if not actual protest.

The subdivision of weight classes into racing and touring car groups by the mere judgment of the committee or the say so of a manufacturer would be highly empirical and arbitrary. It may be that a dislike to open the way for such dissatisfaction led the Boston club committee to the other extreme of rigid adherence to the weight classification. It is easy to suppose that were such an arbitrary method of grouping cars, as racers and roadsters, regularly employed, constructors would find means of getting around the intent of the rules—contests between similarly equipped and fairly matched cars.

Apparently the only way out of the difficulty is to adopt a minimum weight for each class and some exact measure of engine capacity. Were such a method adopted it would be up to the builder to construct a car capable of competing on even terms with any other car of generally similar character, and race committees would be freed from the responsibility of deciding arbitrarily what machine could or could not enter any particular class. In

one case there would be an exact method of placing entries, as against the highly empirical method in the other.

It is all very well to talk about what is being done abroad and that if one country can come under the weight for a given power so can another. We are facing a "condition and not a theory." Whom does the present system as applied to the Boston hill climb benefit? Not the winner certainly, for if he did not win in such unequal contests he would be disgraced. Not the loser who has never had "a run for his money," and who really makes an exhibition of himself before thousands of spectators who do not appreciate the real situation but who can understand his announced defeat.

At the Eagle Rock trials last fall before the adoption of the present A. A. A. racing rules the classification of cars by selling price, though highly empirical, gave good sport, for it grouped the cars into fairly uniform classes.

Nothing in the way of classification here suggested would unfavorably affect the high powered cars. They would be run in their own class, and could gain much more renown in winning a closely contested race than in carrying off any prize in what is practically a walk-over.



**Legal
Speed**

Mayor McClellan is expected to lead the parade **Demonstration** of automobiles in New York City on Saturday in his new automobile, and it seems reasonable to suppose that Colonel Woodbury, commissioner of street cleaning, who has been using an automobile in his work for some time, will join the mayor in this precedent. In view of this the mental query arises, what effect on speed regulations is this tendency of public officials to use automobiles likely to have?

It cannot have escaped general note that the police, in their strict enforcement of the speed law, especially in Central Park, have unwittingly arrested many persons rather closely identified with municipal administration. They have even asserted that the commissioner of police was exceeding the legal limit, while the son of a judge of the State Courts and the professional chauffeur of another were haled before police magistrates. A son of Tammany's ex-chief and the names of prominent men galore have been given undesired publicity in connection with the police records.

All of this is leading somewhere—probably to an early revision of public sentiment toward automobileists in general and a recognition of the fact that a growing familiarity with the motor car on the part of users of the streets will of itself bring about a reduction in the number of accidents, regardless of the question of speed.

The trouble in Central Park, where so many arrests have been made of late, appears to be the absurdly low speed

limit of seven miles prescribed by the park board. This is at the rate of a mile in a little more than 8 1-2 minutes. Almost any healthy man can walk a mile in ten minutes, while, as was recently pointed out, by an editor in Louisville, Ky., when a proposed ordinance was recommitted in the upper board of the general council at the request of an alderman who wanted the speed limitation reduced from twelve to eight miles within the city limits—every old blind, spavined horse in the city that is driven by a coal peddler or old rags man travels a mile in less than 7 1-2 minutes. The mile walking record for a man is held by Donovan at 6: 22 1-2.

In order that the city officials and the public generally may have a practical and convincing demonstration of what the limitation to seven miles an hour really means, it is planned to lead Saturday's parade through Central Park at the maximum legal rate.



The official report of the hearing which took place on January 26, before the U. S. Senate Committee on Agriculture and Forestry on the subject of Roads and Road Building, has just been received. The report takes the form of a pamphlet of 115 pages, and gives in full the addresses of the members of the committee of the National Good Roads Convention in support of the Latimer bill to establish a Bureau of Public Highways and to provide for national aid in road building, and of the Brownlow bill, introduced by Senator Gallinger, to create a Bureau of Public Roads and to provide for a system of national, State and local co-operation in the permanent improvement of the public highways.

In addition to the addresses of the members of the committee, the views of many prominent men, including President Roosevelt, on the matter of highways, are given; also a short resumé of the present status of American road legislation; an interesting series of short articles concerning the roads of foreign countries; and finally, a number of quotations from the "Editorial utterances of leading periodicals in favor of national aid to road improvement."

RECENT INCORPORATIONS.

The Touring Car Co., New York; capital, \$10,000. Directors, C. K. Starr, Harry Boes, and G. W. Olvany, of New York.

Outing Automobile Co., Brooklyn; capital \$30,000. Directors, F. L. Smith, Albert Bautte and A. L. Brougham, all of Brooklyn.

Breeze Motor Mfg. Co., Newark, N. J.; capital \$10,000; to manufacture and deal in automobile engines. Incorporators, George A. Breeze, Hays Stummel and Joseph V. Weber.

The Angier Co., Boston; capital \$10,000; to buy, sell and lease automobiles. Incorporators, Wm. M. Barber, Oscar M. Angier and Eugene E. Kinsley.

PROTESTS HILL-CLIMB CLASSIFICATION.

L. J. Phelps Calls Attention of Massachusetts Club's Racing Board to Absurdity of Low Powered Touring Cars Competing Against Special Racing Machines.

Special Correspondence.

BOSTON, April 25.—An interesting outcome of the hill-climbing contest on Commonwealth Avenue Boulevard April 19 is the protest sent by Lucius J. Phelps, of the Phelps Motor Vehicle Company, to Chairman William Wallace, of the Massachusetts Automobile Club Racing Committee, which had charge of the competition. Mr. Phelps' letter, dated Stoneham, Mass., April 20, reads as follows:

Dear Sir:—We wish to express our disapproval of the classification of cars in the hill-climbing contest, held at Commonwealth Avenue hill, Boston, yesterday afternoon. The thought of our having allowed ourselves to be drawn into so unequal a contest is very humiliating. We are perfectly willing and anxious to enter our cars in competition with others of the same class at any time, but you must admit that it is the height of folly to pit a standard touring car against those bullet headed monsters, whose only merit consists in the number of feet per second at which they can be projected through space, and which are so perfectly helpless under ordinary conditions of travel that they have to be towed to the tape.

We do not wish to decry the high powered racing car. Its development as well as its performances are very interesting, but they are in a class by themselves, and should be so considered at all times. So far as our information goes, this is the first contest in this country where cars so entirely dissimilar have met in competition, and for the good of the sport as well as the industry it is hoped that it will be the last.

Signed—

PHelps MOTOR VEHICLE Co.,
By L. J. Phelps, Gen. Mgr.

Discussing the sending of the letter Mr. Phelps says: "There isn't any doubt that in fairness the specially-built racing cars ought to compete in a class by themselves. Never before this Boston hill-climb have they been mixed in with the stock cars, and never before have the stock cars been forced to compete under such unequal conditions. It was certain at the start that none of them could make a showing against the big specials like that of Mr. Bowden and that of Mr. Hills. In the Eagle Rock hill-climbing contest, the racers had to run in a separate class, and everybody was satisfied. The stock cars were classed according to their regular retail selling price, and I believe that is as fair a method as any that has been suggested. My cars didn't go so well this year as they have done before on this hill, but so far as the straight stock cars are concerned, I believe we still hold the record for this hill."

Mr. Phelps' car, in a special trial, under timing by the same party that timed the April 19 contest, went up the hill last year in 27 seconds, which was regarded as

phenomenal at the time in view of the fact that the April 19 competitive gasoline record for the hill, made in 1903, was 43 1-5 seconds. Asked this week if he did not consider the Pope-Toledo car, which ran up the hill in this year's contest in 24 4-5 seconds, a stock car, and therefore entitled to rank ahead of the Phelps 27-second car, Mr. Phelps said he didn't know, but had heard that it was specially built for hill-climbing.

Nothing will be done by the Massachusetts Automobile Club regarding the Phelps protest. Chairman Wallace said today, when asked about the matter:

"Mr. Phelps' protest was nothing more than a general 'kick.' Our committee isn't going to do anything about it. What can we do? We didn't make the rules. We simply took the rules that had been adopted three or four weeks before by the American Automobile Association, and Mr. Phelps and all the rest of the entrants knew before they went into the contest that the classification was by weight alone. We ran the contest under A. A. A. sanction, and we had to abide by the rules. The rules were the French rules, and I understand the reason they were adopted was because the records of American cars could be made under similar conditions to those of French cars and so be accepted abroad as well as in this country. This weight classification has been accepted by England, Italy, Belgium and Germany, besides France, and these are all countries that are a good deal older in the automobile game than we are. If Mr. Phelps didn't wish to enter his car under the condition of these rules, it wasn't anything that we could remedy. The protest isn't a matter that we can do anything about. It ought to go to the Association, if anywhere."

It appears that there was an objection just before the contest from the White people, who held that their car was unjustly discriminated against because no other steamer was of the right weight to race it under equal conditions. But they were told that the committee would have to abide by the rules, and that the White could race against itself or compete in a class by itself, if necessary, but no change could be made in the rules. In the main, however, there were few if any protests against the classification; for although the competitors were inclined to feel that there was injustice in being obliged to place stock cars in the same classes that were open to the special racers, they recognized that the committee was not at fault.

AN AUTOMOBILE meet to be held at the Fair Grounds in Indianapolis on Decoration Day under the auspices of the Indiana Automobile Association, promises to eclipse any heretofore held in that city. Tom Cooper, Earl Kiser and Carl Fisher are reported to have entered for the professional events.

OLDFIELD FOR CUP RACE.

Reinstated Rider's Offer to Drive Bullet II in International Race Accepted.

Upon learning that the Winton company had offered the *Bullet II* to the disposal of the A. C. A. international contest committee for the Gordon Bennett race, Barney Oldfield, returned at once from New York to Cleveland and asked to be allowed to drive the car in the race should the committee accept the entry and the machine be sent to Germany. The fine of \$100 imposed upon Oldfield by the racing board of the American Automobile Association for competing at unsanctioned meets in the South was paid before he left the East and the driver was reinstated. Since the severance of his relations with the Winton company, following his disqualification, Oldfield had been negotiating with the Peerless and Packard people as his most ardent desire for the last year has been to drive in the Gordon Bennett. The proffer of the *Bullet II* for the race gave him this opportunity, provided Mr. Winton would accept Oldfield's offer to drive the car—which he has done. When Winton and Oldfield separated a few weeks ago, the driver was paid in full for the unexpired time of his contract to August 1.

BUFFALO MOTORCYCLE CLUB FORMED.
Special Correspondence.

BUFFALO, April 25.—The Buffalo Motor Cycle Club was formally and permanently organized here last Friday night in the lecture rooms of the Library building. A constitution and by-laws, drawn up by Dr. Carlos L. Cummings, were adopted. Twenty-eight motorcyclists signed the constitution as charter members. All riders will be admitted as charter members who sign before May 5, when a meeting will be held and permanent officers will be elected.

The objects of association are generally to further the interests of motorcycle riders and to raise and have settled the question whether their machines are to have the same status as bicycles or must come under regulations imposed on automobiles.

It is expected that the organization will prove a benefit to the public as well as to riders, as it is proposed to hold in check reckless riders, if they are members, and an effort will be made to obtain legislation governing the use of the motorcycle.

The club held its first run Sunday, starting at the Lafayette Square at 9:30 a. m., traversing the principal streets and thence to Tonawanda and return.

NEW HOME FOR LONG ISLAND CLUB.

The comfortable clubrooms fitted up last year in Hanson Place, Brooklyn, by the Long Island Automobile Club, must be vacated soon to allow the Long Island Railroad to enlarge its terminal facilities

at Flatbush Avenue and Hanson Place. In view of this, the club has already raised subscriptions covering half the cost of erecting an \$18,000 clubhouse and garage on Park Slope Brooklyn. The plans call for a two-story structure about 60 by 100 feet in size, and having wall of sufficient strength to permit of the addition of other stories when required. The interior will be divided into parlor, reading room, lecture room, grill room, billiard room and bowling alley. The club now has 110 members.

Nearly 100 members and friends occupying two dozen cars, took part in the club's third run of the season last Sunday. The run was led by President Frank G. Webb. The course was out Eastern Parkway and over the Merrick Road to Jamaica, through Rosedale and Hyde Park to Mineola, where a turn north to Roslyn was made. The roads were in excellent condition and the trip a most pleasant one except for a strong, cool wind.

NEWS NOTES OF THE CLUBS.

An automobile club was permanently organized recently in Racine, Wis., at a meeting of a score of enthusiasts, who elected T. M. Kearney president, Henry G. Mitchell, vice-president, and Frank G. Miller, secretary and treasurer. Committees were appointed to draw up a constitution and by-laws and to decide upon a name for the organization. Objects of the club, in addition to its social features, are to make a united stand against adverse legislation if necessary and to secure accessories at trade prices by ordering in quantities. Club runs will be made to neighboring cities and when informed that parties of motorists from other towns are making a trip to or through Racine, the local automobileists will go out and escort them in.

The Automobile Club of Ottumwa, Ia., has recently been organized with twenty-two members. The following officers were elected: J. F. Kerfott, president; H. E. Hunt, vice-president and A. C. Lee, secretary-treasurer.

Eight new applicants were admitted to membership in the Albany Automobile Club at a meeting held last week. The club voted in favor of the consolidation of the American Automobile Association and the American Motor League. Fred S. Howell was elected to succeed O. A. Quale on the board of directors of the New York State Automobile Association.

Several days after the occurrence of an accident at Halsey and Market Streets, in Newark, in which an automobile operated by William I. Fish, of East Orange, ran into William Fitzgerald, of Maplewood, Mr. Fish received a letter from an attorney representing Mr. Fitzgerald and demanding settlement for serious injuries alleged to have been sustained by his client. Mr. Fish took the matter before the board of governors of the New Jersey Automobile and Motor Club, of which he is a member,

and after investigation by the legal committee, the board of governors decided that Mr. Fish was blameless and directed the club counsel, John R. Hardin, to defend the case for him.

At its second annual business meeting, and banquet, held recently, the A. C. of Bridgeport elected officers for the ensuing year as follows: President, Frank W. Bolande; vice-president, F. I. Hitchcock; secretary, Dr. Dow R. Beebe; treasurer, Frank T. Staples; governor for one year, M. V. Doud; governors for two years, T. H. Macdonald, Gregory S. Bryan and A. L. Riker. Four new members were admitted.

An automobile club has been formed at San Antonio, Texas, with Dr. J. T. Bennett, president; Pierre Bremond, vice-president, and Eugene Tips, secretary-treasurer.

An automobile club of about twenty-five members has been organized at Knoxville, Tenn.

The New York Motorcycle Club has secured quarters at 10 West 60th Street, New York, where it has fitted up club-rooms with many conveniences, and provided ample storage-room for the members' machines on the floor below.

The McHenry County Automobile Club has been organized at Woodstock, Ill. The membership is composed of machine owners of McHenry County. The officers elected were: President, A. J. Olson, Woodstock; vice-presidents, E. B. Manley, Harvard; John Douglass, Hebron; B. A. Taber, Richmond; H. W. Watson, Nunda; J. H. Patterson, Marengo; J. W. Chewning, Algonquin; secretary, A. L. Towne, Harvard; treasurer, E. C. Jewell, Woodstock.

The Palm Beach Power Boat Association H. M. Flagler, president, is planning a two-days' auto-boat meet, to be held about the same time as the automobile tournament next winter on the Ormond-Daytona beach.

The automobile club of Louisville, Ky., has elected officers for the ensuing year as follows: George Wilson, president; Briscoe Hinman, vice-president; Archie Robinson, treasurer; Dr. William Pfingst, secretary.

The St. Augustine Auto Boat Association has been organized, with the following officers: Dr. Andrew Johnson, president; Louis R. McLain, vice-president; W. W. Dewhurts, secretary-treasurer. The association proposes to hold a tournament in 1905 to follow that at Palm Beach.

The New Jersey Automobile and Motor Club will hold its annual meeting and election of officers on May 2. The nominations made are as follows: President, Frederick R. Pratt; vice-president, Dr. James R. English; treasurer, James C. Coleman; members of the board of directors, B. M. Shanley, Jr., J. H. Wood, Angus Sinclair and J. W. Mason.

AKRON PRE-EMINENT IN TIRE MAKING.

Nearly Two-Thirds of All Cars Displayed at Last Winter's Shows were Shod from Her Factories—Some Tire Problems Yet Unsolved.

Special Correspondence.

AKRON, April 23.—It is remarkable what a high proportion of the automobile tires exhibited at automobile shows during the past winter was made in this city. Figures secured at the shows in New York, Chicago, Buffalo, Detroit, Washington, Boston, Cleveland, Springfield, Mass., and Philadelphia show that 646 of the cars exhibited were equipped with tires made in Akron. Of this total, 366 of the cars were fitted with tires made by one company, and 266 with those made by another company. Compared with this total of 646 cars equipped with Akron-made tires, only 234 cars were fitted with American tires made elsewhere. In all of the shows there were 55 foreign cars fitted with foreign tires, while a few foreign cars were equipped with tires made in the United States.

APPROACHING PERFECTION.

The tire problem seems to be nearly but not quite settled. It is felt that the limit is about reached as to durability, composition of material, textile and so forth, but not as to form of tire and especially as to the bead used in attaching the tire to the rim. The form and bead problem is one of engineering skill rather than of constructor's ability. The perfect fit of the bead into the rim, so as to clinch firmly and evenly at all points is the problem that is yet to be worked out thoroughly and perfectly. Rapid progress is being made, however, and the "satisfaction guaranteed" stage is believed to be near at hand in fact as well as in theory.

Solid tires are being manufactured in large quantities and find favor for heavy cars. But the proportion between single tube and detachable pneumatic tire sales has undergone a great change. Last year the detachable tire was in greater favor

than the single tube by a fair margin, but this year the detachable type predominates over the hose pipe form in the proportion of 30 to 1. The demand for tires this year has become so great that these differences are especially noticeable. Most of the tire manufacturers are taking particular pains not to fit any rims with their first-class tires unless the rims bear an inspector's brand that is becoming identified with perfection in the minds of buyers. The tire and rim makers have agreed upon the use of a special mark or stamp to be used only to distinguish their best products coming up to certain specifications and exact dimensions. No manufacturer will guarantee any tire on a machine unless the rim carries this brand. The tire manufacturers will put their tires on rims not marked with this inspector's insignia, but they do not guarantee such tires.

PRICES MAY RISE NEXT SEASON.

A factor that is having a perceptible influence and is likely to have much more by another year, is the constant increase in the price of crude rubber. It is stated by good authorities that the cost of rubber at present is 20 per cent. higher than it was when a majority of the season's contracts were made. This is a matter that affects the manufacturers at present more than any other, but by another season the effect will be seen in increased prices for machines unless the matter of competition shall affect the market differently from what is now expected. The crude rubber producers are not worrying any, unless it is over the comparatively small supply they have to draw from. They know that manufacturers must take their supply, and are profiting from the great quantity of material required to make the immense number of tires now turned out.

But crude rubber is not the only important factor in the first cost of tires. The textile used in the detachable tires is made of expensive material. Sea Island cotton, a necessary and large constituent, was never higher priced than now. The increased cost of materials has put no perceptible restrictions on the output, however.

MEISELBACH ENTERS MANUFACTURING FIELD.

Former Bicycle Builder Organizes New Company and Starts Work on \$30,000 Plant at North Milwaukee with Characteristic Energy—Backed by Chicago and New York Capital.

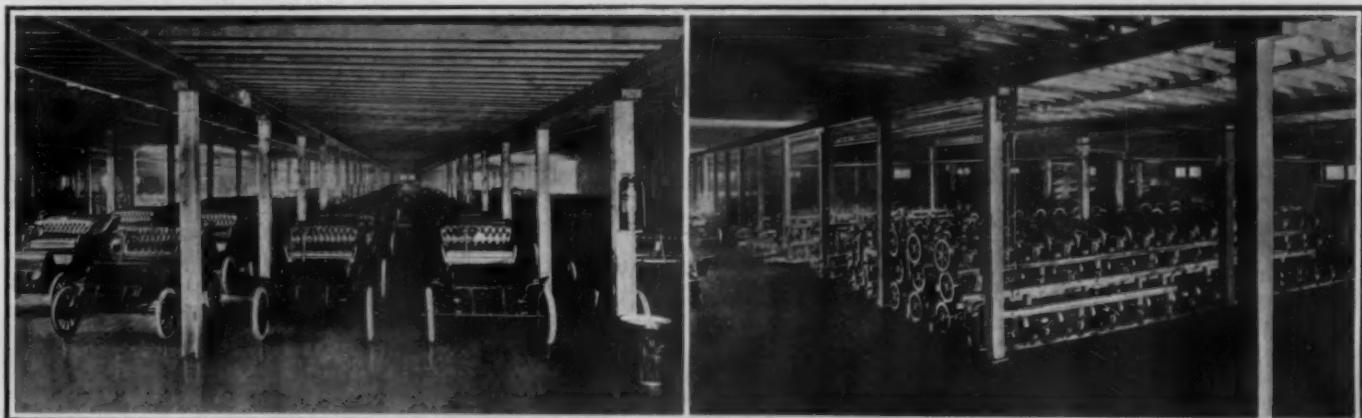
Special Correspondence.

MILWAUKEE, April 25.—The A. D. Meiselbach Motor Vehicle Company was organized here last week and articles of incorporation have been filed with the Secretary of State at Madison. The new concern will this week begin the erection of eight brick and frame factory buildings on five acres of property in North Milwaukee adjoining the right of way of the Chicago, Milwaukee and St. Paul railroad and directly opposite the railway station.

A. D. Meiselbach, well known as the largest builder of cheap bicycles a few years ago and later the principal organizer of the Meiselbach Typewriter Company, is the chief promoter of the new concern, although Chicago and New York capitalists will hold considerable of the stock. A. N. Miller, who is to be the superintendent of the new plant, will also be a stockholder. He and Fred D. Clinton and Byron R. Godfrey are the incorporators. The active management of the company will be in the hands of Mr. Meiselbach, but Mr. Meiselbach will retain his present residence at 530 Eddy Street, Chicago.

Plans already drawn by Buemming & Dick, of this city, call for factory buildings one and two stories in height to cost \$30,000. The largest will be 60 by 350 feet and the smallest 60 by 150 feet. The work of excavation has already begun and everything possible will be done to push the buildings to completion by August 1.

It is expected to place machines manufactured by the new company on the market before the end of the summer. The company will make several styles of motor vehicles, using not only several patents owned by Mr. Meiselbach, but also the McKaig patents. The new plant will employ several hundred men.



Southeast Quarter of Warehouse Filled with New Cars.

WAREHOUSE OF CADILLAC AUTOMOBILE COMPANY WHICH WAS NOT BURNED IN THE FIRE OF APRIL 13.

Northwest Quarter of Warehouse Containing Stock of 2,000 Engines.

April 30, 1904.

CHANGES IN CHICAGO TRADE.
Several New Buildings to Be Ready for Occupancy Soon.

Special Correspondence.

CHICAGO, April 23.—The Chicago Automobile Exchange, which was located at Sixteenth Street and Michigan Avenue last winter, has been incorporated with a capital stock of \$8,000, and secured a new location at 1516 Michigan Avenue, where a two-story building 30 by 175 feet will be erected at once. The contractor has promised to have it ready for occupancy by July 1. The company will handle the Rodgers and the Michigan cars, and will also buy and sell second-hand machines. The incorporators are: J. H. Holmes, M. Holmes, Otto B. Schmid and B. Schmid. J. H. Holmes will be the manager.

The Chicago branch of the Winton Motor Carriage Company has secured temporary office room with the Hayden Automobile Company, at 1337 Michigan Avenue. The contractors for the new Winton building at Thirteenth Street and Michigan have promised to have the first floor ready for use by May 20.

The local branch of the Knox Automobile Company, of which George D. Crane is manager, is having a building erected at 1251 Michigan Avenue, next door to the Winton building. Mr. Crane expects to be in his new quarters by the middle of next month. H. H. Pierce, of Racine, Wis., has recently joined the force of Knox salesmen.

The popularity of the limousine in the West is made evident here by the large number of orders being received by the Limousine and Carriage Mfg. Co., which makes limousine bodies for any make of car. Some special designs are now being built on order. The company was recently reorganized with O. C. Graff, formerly of the Kimball Carriage Company, as manager.

DIRECTORY OF CHICAGO TRADE.

In the following list are given the names and locations of all of the complete vehicle concerns now doing business here, together with the name or names of the vehicles sold by each.

The local manufacturers are:

Woods Motor Vehicle Co., 110 E. 16th St.—Woods electrics.

T. L. Tincher, 6521 Wentworth Ave.—Tincher.

J. H. Dawson Machinery Co., 39 S. Canal St.—Dawson.

Chicago Moto-Cycle Co., 536 Wabash Ave.—gasoline cars.

The manufacturers' branch houses located here are:

The Winton Motor Carriage Co., Charles H. Tucker, manager, Michigan Avenue and Fourteenth Street.

Apperson Bros., John E. Fry, sales manager, 394 Wabash Avenue.

Electric Vehicle Co., Frank J. Fanning, manager, 1413 Michigan.

Haynes-Apperson Co., J. B. Deibler, manager, 1420 Michigan.

Thos. B. Jeffery & Co., Joseph F. Gunther, manager, 304 Wabash.

Locomobile Co. of America, Bernard G. Sykes, manager, Michigan and 14th Street.

Knox Automobile Co., George A. Crane, manager, 521 Wabash.

Studebaker Bros. Mfg. Co., W. L. Hibbard, manager automobile department, 384 Wabash.

The local agencies are:

Cadillac Co. of Illinois, L. J. Ollier, manager, 1312 Michigan—Cadillac and Clement.

Dan Canary Automobile Co., 521 Wabash—Berg.

M. E. Cooke, 394 Wabash—Acme.

Western Automobile Co., C. F. Dodge, manager, 1303 Michigan—Fredonia.

Githens Bros. Oldsmobile Co., Walter Githens, manager, 1412 Michigan—Oldsmobile.

West Side Automobile Station, C. E. Graham, manager, 601 W. Madison St.—American.

Hagmann & Hammerly, 1077 Harrison St.—Marr.

F. P. Illsley, 1421 Michigan Ave.—Peerless.

Pardee & Co., Fred J. Pardee, manager, 1404 Michigan—Packard, Yale and Elmore.

Ralph Temple Automobile Co., 293 Wabash—Franklin, Darracq, Northern and Stevens-Duryea.

R. B. Graham, 20 Lake St.—Glide.

Arthur G. Bennett, 20 Lake St.—Premier and Mitchell.

North Side Automobile Repository, H. Paulman, manager, 247 North State St.—Pierce.

Greer Automobile Co., C. F. Greer, manager, 508 Wabash Ave.—Courier.

Henry J. Ullman, 506 Wabash—White. Rothschild & Co., 372 Wabash, D. G. Thompson, manager—Cleveland.

Hayden Automobile Co., 1339 Michigan—National and Queen.

Illinois Motor Car Co., Zimmerman & Chapin, 1407 Michigan—Ford and Royal Tourist.

Gas Engine & Power Co. and Charles L. Seabury & Co., Con., Dan B. Southard, manager—Howard.

Orlando F. Weber & Co., 392 Wabash—Pope lines.

C. A. Coey & Co., 5311 Cottage Grove Ave.—Thomas.

C. P. Root, 435 Wabash—St. Louis.

Mead Cycle Co., 1245 Wabash—Benz-Parsifal and Orient.

Charles A. White, 521 Wabash—Overland.

D. J. Holmes, 1602 Michigan—Michigan.

OSCAR HEDSTROM, of Springfield, Mass., has recently completed a four-cylinder motorcycle of 20 horsepower, with which he expects to go to Ormond and bring back a motorcycle record of 30 sec. for the mile.

SITUATION IN OAKLAND.

Boosters' Club May Divert Trade from Frisco to Local Shops.

Special Correspondence.

OAKLAND, Cal., April 19.—About forty automobiles are now owned in this city, and the reason why there are not more is because no one has ever come across the Bay of San Francisco to push the sale of them. Local residents appear to prefer to do their buying, when they do purchase, in San Francisco; but this will soon be changed, it is believed, as a Boosters' Club has been organized here to "boost" local trade. The members are prominent business men of the city and great results are confidently expected from this movement to encourage the residents to patronize home industry and enterprise.

The first regular sales depot and garage is to be opened by Hugo Miller, who has held the agency for Pierce bicycles for the last four years and has just taken the agency for the Ford and Holley automobiles. He will open a storage room and repair shop for the present in his quarters at 1307 Broadway, but after September 1 a new building will be ready for his occupancy at Twelfth and Harrison Streets on the direct and only road that automobiles can use entering and leaving Oakland.

There is no lack of repair facilities here as at least three shops are now catering to the motorists, and expansions have just been made by two of these to provide storage room. The Union Machine Works, at Third and Franklin Streets, has added to its present quarters two floors and is now in position to store a fair number of cars and to do anything in the line of automobile repairing. The shop is centrally located and the mechanical work is under the supervision of H. Duckworth, an expert in construction and repairing. The Union Works does not expect to engage in the selling of vehicles.

Brown & Horner have recently moved to much larger quarters at 315 Eighth Street, where the storage of machines will be added as a new feature to their business of repairing automobiles. The shop has facilities for the rebuilding of vehicles and a line of parts and supplies will be kept in stock.

A very creditable garage is being conducted at 513 Sixteenth Street by S. C. Myers, whose repair work has increased of late sufficiently to warrant the addition of two extra machinists to the force. Storage, repairs and the sale of supplies has constituted the business during the last three years, as Mr. Myers has not taken any automobile agency.

THE first electric delivery wagon to be put in use in Joliet, Ill., is a Pope-Waverley, which has recently been added to the delivery system of Ducker's department store.

Current News from New York.

Headed by Winthrop E. Scarritt, president of the Automobile Club of America, the automobile parade will start on Saturday afternoon, April 30, at 2 o'clock, and begin its impressive progress from the automobile clubhouse at 58th Street and Fifth Avenue. It will enter Central Park at 59th Street and Fifth Avenue, run up the East Drive to 110th Street, down the East Drive to the 72d Street entrance, where the park is left, the procession crossing to Riverside Drive on 72d Street. After going around Grant's Tomb the parade will proceed down Riverside Drive to 72d Street, but instead of again entering Central Park, as was at first intended, it will go down Broadway, entering 59th Street at the Circle and crossing to Fifth Avenue, completing the route at the automobile clubhouse.

The parade will be divided into eight sections: First, guests; second, American gasoline touring cars; third, American gasoline runabouts; fourth, foreign automobiles and racing cars; fifth, American steam cars; sixth, American electric cars; seventh, electric cabs; and, eighth, commercial vehicles of all kinds. The various divisions will assemble in the side streets along Fifth Avenue as follows: First, in East 58th Street; second, in West 51st Street; third, in West 52d; fourth, in West 53d; fifth, in West 54th; sixth, in West 55th; seventh, in West 56th; and eighth, in West 57th.

The fourth division, in which the racing cars will parade, is expected to make a good showing, though the change of date from May 7 to April 30 left but little time for getting entries. The Winton *Bullet* has been forwarded from Daytona, Florida, and will, in all probability, be in the fourth division, together with its smaller relative, the Winton *Pup*. It is planned to have Mayor McClellan ride with Mr. Scarritt at the head of the parade, and when the first division passes the clubhouse at the end of the run, he and other officials and distinguished guests will alight and review the remaining sections from the clubhouse windows.

At a meeting of the Racing Board of the American Automobile Association held on April 19, a resolution was adopted reinstating Barney Oldfield, who was disqualified for taking part in unsanctioned competitions, the reinstatement to be preceded by the payment of a fine of \$100. The fine was promptly paid, and Oldfield is again eligible for races, though he has expressed his intention of sticking to the straight and narrow way marked out by the Racing Board of the A. A. A. On April 22 the Racing Board again met, and the case of E. C. Hauseman was considered at length. The result was a resolution condemning Hauseman to suspension which does not terminate until October 1, and imposing a fine of \$100. Any driver

who competes with Hauseman in an unsanctioned race will also suffer immediate disqualification. Hauseman's case was aggravated by the fact that after having been warned by the Racing Board, he again, on April 17, competed in an unsanctioned meet in the city of Memphis.

The details of the St. Louis tour are gradually being worked out. Hotel and other accommodations are being arranged for along the various routes, and everything possible is being done to make the run a source of pleasure to the participants. Augustus L. Post, who has charge of the arrangements, expects to leave New York for Albany, in company with F. E. Moskovics, in a touring automobile on Monday. At Albany Mr. Post will stop off, leaving Mr. Moskovics to complete the run to St. Louis. It is understood that the latter, though making the trip in the interests of his own business, will follow the route of the tour and will keep the officials informed as to the roads and other conditions as he finds them.

On May 4 a general meeting of the members of the National Association of Automobile Manufacturers will be held at the offices of the association, 7 East 42d St., for the purpose of completing all arrangements for the turning over of all property to the officials of the National Association of Automobile Manufacturers, Incorporated.

At the annual meeting of the Association held at Madison Square Garden during the Automobile Show in January, it was decided that the Association should be incorporated. This has been done, and at the meeting of May 4 the old association will turn over to the new all its powers and property. The members will thus be relieved of all personal liability and the transaction of business will be greatly facilitated.

On May 18 a meeting of the incorporated association will be held, when a constitution and by-laws will be adopted.

Edwin Gould's 40-horsepower Panhard automobile was badly smashed and Lee Collins, his chauffeur, and three other chauffeurs, friends of Collins, were injured early Monday morning last at the end of a pleasure jaunt in the car. The quartette took the car out on Sunday afternoon, and after driving around Central Park for a time, went to McGowan's Tavern for dinner. After dining they went north and enjoyed themselves running the car over some of the good stretches of road in the upper portion of Manhattan Island. About midnight, when rain began to fall, they headed homeward. Collins was steering and took the machine down Seventh Avenue. On approaching the block between 141st and 142d Streets Collins saw a light that had been placed on a pile of building material in the road, but,

believing it to indicate road repairs, turned the machine toward the sidewalk, intending to pass between it and the obstruction. The heavy car struck the pile with a crash, throwing out Lee Collins and Arthur Isbell and turning over upon the other two, Anton Manchester and David Dillon. A policeman and several men who were passing righted the car and got the two men out, both in a state of unconsciousness. Collins had landed on his hands and knees and was merely scratched and bruised. Isbell struck the pavement head first and sustained concussion of the brain. Dillon's left leg and Manchester's left arm were fractured and both had minor injuries. An ambulance was called and all but Collins were taken to the Harlem Hospital, while Collins' hurts were attended to on the spot. The automobile, which was pretty badly smashed, was towed to a garage.

If the application of Manager Joseph Cowan, of the recently opened Clason Point Inn, at Westchester, N. Y., to have a motor boat course measured and marked in the East River, off Clason Point, is acted upon favorably by the motor boat race committee of the American Automobile Association, the management of the inn expects to offer a number of prizes for a series of auto-boat races to be held there during the coming summer under official sanction.

A garage has been opened at 1 West 34th St., New York, where the De Dietrich car will be handled to the exclusion of all others. The entire five-story building has been leased, and the necessary alterations are almost completed. The first floor is used as a sort of distributing point, though a few cars will be stored there. The front part of the second floor is used as a sales and showroom, while offices are being fitted up in the rear. Offices and a limited storage space will occupy the third floor, while the fourth and fifth will be used as stock and storage rooms. A smaller building, three stories high, in the rear of the garage proper, has been secured and will be equipped as a repair shop, while the intervening space will be available for storage if more space for this purpose is required, as it can readily be roofed in. A 30-horsepower De Dietrich touring car is placed at the windows of the showroom facing the street, and brilliantly illuminated by hidden electric lights. The car is raised from the floor so that it can be seen from the sidewalk, and the effect at night is fine. All the appointments of the garage are exceedingly handsome, the manager, Mr. Jarrage, stating that no expense is being spared to make everything as nearly perfect as possible.

Carlton D. Mabley, of the firm of Smith & Mabley, who has been ill for some time, was on Saturday operated upon for appendicitis. According to last reports the operation was successful, and Mr. Mabley is doing well.



Bert Holcomb, of New York-Chicago fame, has been making test runs over Connecticut roads the past few weeks with the new 35-horsepower Columbia cars.

Mayor George B. McClellan, of New York City, who recently acquired a new French car, secured a license to operate his machine from the Secretary of State last week.

Recognizing that the automobile is fast becoming a necessity in commercial life, four leading business houses of Indianapolis are using Pope-Waverley electric delivery wagons.

By the use of the facilities of its additional buildings, the capacity of the E. R. Thomas Motor Company's plant in Buffalo will soon be nearly doubled. The company has been working a night shift of late.

W. C. Hood, of Newark, N. J., recently climbed Eagle Rock hill at West Orange in 5 min. 15 sec. in his Cameron 6-horsepower car, with two passengers aboard in addition to himself.

The story of the Packard transcontinental trip made by E. T. Fetch and M. C. Krarup in *Old Pacific*, is told in *World's Work* for May by Mr. Krarup under the title, "From Coast to Coast in an Automobile."

William K. Vanderbilt, Jr., has denied the report that he will abandon automobile racing. On the contrary, he will do his best to retain the honors he has already won, and has sold his racing cars only to replace them with faster ones.

A noteworthy feat in the recent British trials was the 1,000-mile non-stop-run made by the Georges Richard-Braiser car, which traveled the entire thousand miles without a stop of the engine, and averaged 23 1-2 miles an hour.

The American Automobile Co., with a capital of \$50,000, recently organized at Cleveland, O., by C. W. De Mooy, Charles T. McLaughlin, and others, has purchased the effects of the American Motor Carriage Co., of that city, which has been in the hands of a receiver for several months. The new company will continue the manufacture of automobiles.

The Schlig Automobile Works has recently been established at Evanston, Ill., with a storage and charging station at 1725 Maple Avenue, and a well-equipped repair and assembling shop in the Park Building near Davis Street and the railroad. The company is owned and is being conducted by Mark W. Shaw, John Green and John Schlig. The company buys parts and assembles them into complete vehicles.

Alfred G. Vanderbilt's 60-horsepower Mercedes has been entered for the May 30 meet at Empire City track, to be driven by Paul Satoris, and it is announced that this car will be eligible for competition at other big race meets during the season.

Plans have been completed for a new brick garage 90 by 90 feet to be erected in East Long Street, Columbus, O., for William Frisbie, of the Columbus Motor Vehicle Co. The building will be provided with all the usual up-to-date facilities.

The Chisholm bill, making the unauthorized removal and operation of an automobile left standing at the curb in the street a crime punishable by a fine of \$1,000 or imprisonment for sixty days or both, has been passed by the Ohio House of Representatives.

The Macnish Automobile Co., of St. Louis, has leased for a period of five years a lot on Olive Street, near Grand Avenue, where it will erect a modern garage and salesroom at a cost of \$20,000. The building, plans for which are now being drawn, will be 50 by 120 feet and two stories in height, and is expected to be ready for occupancy by June 15.

The members of the Newark, N. J., police department made a trip to the Rahway Reformatory last week, Thursday, in automobiles. Police Commissioners Clark and Dusenberry, accompanied by Chief of Police Henry Hopper and Captain of Detectives Cosgrove, occupied a Peerless machine driven by C. L. Calvert, while Commissioners Sheller and Castle rode in an Autocar in charge of L. J. Wurth.

T. H. Veach, who has made a business of automobile repairing in Sacramento, Cal., for several years, feels so much confidence in the growth of the automobile trade there, as a result of the present indications, that he will have a garage built. He has secured the agencies for the White steamer and the Ford, Eldredge and Mitchell gasoline cars. He has just finished building a 26-horsepower gasoline car for Dr. Campbell of his city.

Norris Mason of the United States Agency of the Michelin Tire Company, sails for Europe next week for a brief visit to the factory. He will also be present at the French elimination trials. The Michelin company has prepared an elaborate exhibit for the St. Louis exposition, one of the features of which will be an immense frame 20 by 30 feet in which will be shown every part that enters into the construction of the tire, together with sections of every size tire made by the firm.

The Knox Automobile Company's exhibit at the St. Louis Fair consists of one Tudor touring car with King of the Belgians body, canopy top and glass front, finished in royal blue with light-yellow wheels; one Lenox touring car, painted green with yellow wheels; an Adams delivery car, a double-cylinder chassis with motor driven by belt from an electric motor to show its operation; and a crankshaft with complete transmission mounted on a stand. A Lemp steering check is fitted to the double-cylinder chassis in such a manner that its operation is easily observed.

The W. C. Jaynes Automobile Co., of Buffalo, has just moved into its new garage, located on Main Street, next door to its old store in Automobile Row. The garage fronts 50 feet on Main Street, and extends back 200 feet to Washington street. The main floor is laid in concrete throughout; the office and women's reception-room on the main floor are laid with hardwood over the concrete. The building will be equipped with electric lights, and all the latest devices have been adopted. The company is agent for the Oldsmobiles and Winton.

The Franklin P. Shumway Co. was recently incorporated to succeed to the advertising agency business conducted in Boston by Franklin P. Shumway, of 373 Washington Street, Boston. The large business built up with many clients among leading manufacturers, jobbers and retailers in New England, New York and the Central West, has outgrown the individual and the business was incorporated to place it upon a permanent basis. It is capitalized at \$30,000. In addition to a large clerical force, the company is represented on the outside by Messrs. D. J. MacNichol, H. D. Cushing, A. B. Hitchcock, Jr., W. B. Hay, F. E. Allen, J. B. Spafford, Jr., and D. C. Jordan.

The Automobile Garage & Repair Co., of Cleveland, has leased a large building on Huron Street, near Euclid Avenue, that city and will fit it up as a modern salesroom, storage place and repair shop. The building was formerly occupied as a carriage repository by J. O. Greene. It has nearly 40,000 square feet of floor space and has light on all four sides. The garage company will install its own generators and two switchboards each capable of charging a dozen electric vehicles simultaneously. Washing stands and repair machinery will also be put in. The company is Ohio distributor for the Autocar, agent in Northern Ohio for the Packard and also agent for the Waverley. A State supply depot for accessories will also be opened in the building.

